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**Launching New Products  
in the Finnish Pharmaceutical Industry:  
A Relationship Approach**

by

Minna Matikainen

ACADEMIC DISSERTATION

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## **Abstract**

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Successful product launches are a critical driver of a company's performance. The prevailing literature on the launch of new products has mainly concentrated on a product's superiority compared to that of its competitors as well as the strategic and tactical launch activities. Studies on the strategic orientations of companies have generally focused on customers and competitors by predicting the launch performance through the concept of market orientation. However, the existing literature on new product launch has largely omitted the importance of customer relationships, although relationship marketing has been one of the dominant paradigms in industrial marketing research. Thus, the concept of relationship orientation, which emphasizes the importance of customer relationships, offers a fruitful research setting because it complements the dominant new product launch approaches.

The pharmaceutical industry places a heavy emphasis on research and development and has a vital reliance on successful product launches. However, the literature on pharmaceutical new product launches is fragmented, and there is currently a lack of holistic overviews on the key determinants of what makes a successful launch. Thus, the aim of this thesis is to provide a comprehensive overview on the role and impact of the key determinants of a successful new product launch in the pharmaceutical industry, focusing especially on the aspects of relationships from the perspectives of both buyers and sellers. In practice, this study considers the extent to which a new product launch and getting physicians' to prescribe a new drug is relational activity. It also examines the phase of the launch process in which relational activities should be used and how they should be conducted in order to maximize the launch performance.

The role and relative impact of a company's strategic orientations and their mediating mechanisms were studied with survey data collected from the pharmaceutical companies operating in Finland. Partial least squares path modeling revealed that the relationship orientation had the strongest positive impact on both customer acceptance and on the financial success of a launch when compared to market orientation and product orientation. It was found that a company's accumulated market-based assets represented an alternative mediator in addition to the widely studied concept of product advantage. Furthermore, it was shown that sales force management and relationship marketing activities transformed a relationship-oriented organizational culture into launch performance.

The partial least squares regression modeling combined with target projection helped to identify the diversity of determinants affecting launch performance. It was found that product advantage and relationship marketing activities contributed to gaining the acceptance of key opinion leaders in the early phase of launch, while market-based assets and a company's relationship orientation largely determined the acceptance of the majority of target customers in the later phase. Both strategic choices and tactical decisions drove the financial success of a new product launch.

The buyer's perspective focused on the physician-pharmaceutical industry relationship and how this affected the introduction of a new product. The relationship was studied by means of theme-interviews among a randomized sample of physicians. The positive relationship orientation of the physicians toward the pharmaceutical industry and whether they actively interacted with pharmaceutical companies were reflected in their early adoption of new drugs, especially when a product had a unique advantage and the physician's own personal interest accelerated the adoption of a new drug. In comparison, physicians who were negatively oriented to the pharmaceutical industry and interacted with it in a passive way adopted the use of a new drug later and did so based on evidence- and experience-based reasoning and the opinions of colleagues.

In conclusion, this thesis calls for a relationship approach in order to complement the traditional sales and marketing approach regarding the launch of new pharmaceutical products. A successful pharmaceutical product launch should focus on appropriate relationship marketing activities that are conducted in a timely manner to achieve customer acceptance and financial launch performance.

## Abstrakti

Matikainen MM., 2015. **Uuden tuotteen lanseeraus suomalaisessa lääketeollisuudessa: Suhdenäkökulma**

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Onnistunut tuotelanseeraus on kriittinen edellytys yrityksen menestymiselle. Vallitseva uuden tuotteen lanseeraukseen liittyvä kirjallisuus on keskittynyt pääasiassa tuotteen yliveraisuuteen sen kilpailijoihin verrattuna sekä strategisiin ja taktisiin lanseerausaktiviteetteihin. Yrityksen strategisia orientaatioita koskevat tutkimukset ovat korostaneet yleistä asiakas- ja kilpailijafokusta ennustaen lanseerauksessa onnistumista markkinaorientaatio-käsitteen avulla. Nykyinen uuden tuotteen lanseerauskirjallisuus on kuitenkin pitkälti sivuuttanut asiakassuhteiden merkityksen, vaikka suhdemarkkinointi on yksi vallitsevista suuntauksista teollisen markkinoinnin tutkimuksessa. Tämän vuoksi asiakassuhteiden tärkeyttä korostava suhdeorientaatio tarjoaa hedelmällisen tutkimuspohjan täydentäen vallitsevia uuden tuotteen lanseeraukseen liittyviä näkökumia.

Lääketeollisuus painottaa voimakkaasti tutkimusta ja tuotekehitystä ja on riippuvainen onnistuneista tuotelanseerauksista. Uusien lääkkeiden lanseeraukseen liittyvä kirjallisuus on kuitenkin pirstaloitunutta, eikä lanseerauksen onnistumiseen vaikuttavista keskeisistä tekijöistä ole voitu muodostaa kokonaiskuvaa aikaisemmin. Tämän tutkielman tarkoituksena on saada kattava yleiskuva eri tekijöiden roolista ja vaikutuksesta uuden tuotteen lanseerauksen onnistumiseen lääketeollisuudessa keskittyen erityisesti suhdenäkökulmaan sekä myyjän että ostajan kannalta. Käytännössä tutkimuksessa on kyse siitä, missä määrin lääkkeiden lanseeraaminen ja lääkärin saaminen määräämään uutta lääkettä on suhdetoimintaa ja missä lanseerausprosessin vaiheessa ja miten suhdetoimintaan liittyviä aktiviteetteja tulisi harjoittaa lääkelanseerauksen onnistumisen todennäköisyyden maksimoimiseksi.

Yrityksen strategisten orientaatioiden roolia ja suhteellista vaikutusta sekä niiden välittäviä mekanismeja tutkittiin kyselytutkimuksessa kerätyllä aineistolla Suomessa toimivista lääkeyrityksistä. Partial least squares –polkumallinnus osoitti, että suhdeorientaatiolla oli suurin positiivinen vaikutus sekä asiakashyväksyntään että lanseerauksen taloudelliseen onnistumiseen markkina- ja tuoteorientaatioihin verrattuna. Tutkimus osoitti, että laajasti tutkitun tuote-edun lisäksi yritykselle kertyneet markkinapohjaiset edut sekä myyntihenkilöstön johtaminen ja suhdemarkkinointi-aktiviteetit välittävät suhdeorientaatiota korostavan organisaatiokulttuurin muuntumista onnistuneeksi lanseeraukseksi.

Lisäksi partial least squares –regressiomallinnus yhdistettynä target projection –menetelmään tunnisti lanseerauksen onnistumiseen vaikuttavien menestystekijöiden

monimuotoisuuden. Tuote-etä ja suhdemarkkinointi-aktiviteetit vaikuttavat keskeisten mielipidevaikuttajien hyväksynnän saavuttamiseen lanseerauksen varhaisessa vaiheessa, kun taas markkinapohjainen pääoma ja yrityksen suhdeorientaatio määrittävät pitkälti pääasiallisten kohdeasiakkaiden hyväksynnän myöhemmässä vaiheessa. Strategiset valinnat ja taktiset päätökset puolestaan vaikuttavat uuden tuotteen lanseerauksen taloudelliseen onnistumiseen.

Tutkimus tarkasteli lääkärin ja lääketieteellisuuden välistä suhdetta ja sen heijastumista uuden lääkkeen käyttöönotossa teemahaastattelututkimuksessa satunnaisotannalla valittujen lääkärin joukossa. Lääkärin positiivinen suhdeorientaatio lääketieteellisuutta kohtaan ja aktiivinen vuorovaikutus lääkeyritysten kanssa heijastuivat varhaisena uuden lääkkeen käyttöönottona, jossa tuote-etä ja lääkäreiden henkilökohtainen kiinnostus nopeuttivat uuden lääkkeen omaksumista. Sen sijaan negatiivisesti orientoituneet ja passiivisesti vuorovaikutuksessa olleet lääkärit ottivat uuden lääkkeen käyttöönsä myöhemmin lääkkeeseen liittyvän tutkimusnäytön ja käyttökokemuksen sekä kollegoiden mielipiteiden perusteella.

Yhteenvetona tämä tutkimus täydentää perinteistä myynti- ja markkinointilähestymistapaa suhdenäkökulmalla uuden tuotteen lanseerauksessa lääketieteellisyydessä. Onnistuneessa lääkelanseerauksessa tulisi keskittyä tarkoituksenmukaisiin ja oikea-aikaisesti toteutettuihin suhdemarkkinointi-aktiviteetteihin asiakashyväksynnän ja lanseerauksen taloudellisen menestyksen saavuttamiseksi.

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In Helsinki, on the 27<sup>th</sup> of April, 2015

Minna Matikainen



*To Aino & Eino*

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## List of original publications

This thesis is based on the following original publications, which are referred to in the text by their respective Roman numerals (**I-IV**).

- I**     **Matikainen, M.**, Terho, H., Parvinen, P., Juppo, A., 2015. The role and impact of firm's strategic orientations on launch performance: Significance of relationship orientation. *Journal of Business & Industrial Marketing. Accepted for publication.*
  
- II**    **Matikainen, M.**, Terho, H., Matikainen, E., Parvinen, P., Juppo, A., 2015. Effective implementation of relationship orientation in new product launches. *Industrial Marketing Management*. 45(Feb): 35-46.  
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- III**   **Matikainen, M.**, Rajalahti, T., Peltoniemi, M., Parvinen, P., Juppo, A., 2015. Determinants of new product launch success in the pharmaceutical industry. *Journal of Pharmaceutical Innovation Special Issue: From R&D to Market*. 10(2): 175-189. DOI: 10.1007/s12247-015-9216-7
  
- IV**    **Matikainen, M.**, Olkkonen, L., Katajavuori, N., Parvinen, P., Juppo, A., 2015. Mutually beneficial collaboration: A qualitative study of physicians' relationship with the pharmaceutical industry and its reflection in introduction of a new drug. *Submitted.*

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## Abbreviations

AVE	Average variance extracted
B2B	Business-to-business
CA	Customer acceptance
GOF	Goodness of fit
KOL	Key opinion leader
MBA	Market-based assets
MO	Market orientation
NPL	New product launch
NPLS	New product launch success
OTC	Over the counter
PA	Product advantage
PCA	Principal component analysis
PLS	Partial least squares
PLS-PM	PLS path modeling
PLS-R/TP	PLS regression modeling combined with target projection
PO	Product orientation
R&D	Research and development
RM	Relationship marketing activities
RO	Relationship orientation
SFM	Sales force management
SR	Selectivity ratio
STR	Strategic choices
TAC	Tactical decisions
TP	Target projection

# **1 Introduction**

## **1.1 Motivation for the study**

New product launch (NPL) means bringing a product to the market for the first time (Beard and Easingwood, 1996; Crawford and Di Benedetto, 2011). The aim of a product launch is to maximize the chances of a company's profitability achieving a product's acceptance in the target market (Guiltinan, 1999). An effective product launch is a critical driver of a company's performance (Di Benedetto, 1999), but also one of the most complicated marketing procedures in existence (Amsbaugh and Pitta, 2006). NPL represents a more specific view on the market entry of a new product compared to the broader concept of commercialization (cf. Aarikka-Stenroos et al., 2014).

The pharmaceutical industry places a heavy emphasis on research and development (R&D), delivering the highest ratio of R&D investment to net sales compared with other industrial sectors (European Federation of Pharmaceutical Industries and Associations, 2014a). Thus, it has a vital reliance on NPL success (Achilladelis and Antonakis, 2001; Corstjens et al., 2005; Feng and Gonsalves, 2010; Fraenkel, 2011). In this changing business environment, pharmaceutical companies aim to launch new drugs onto the market as quickly as possible (DiMasi, 2002; Scypinski, 2009; Feng and Gonsalves, 2010), looking to achieve maximum market penetration and revenue in a limited timeframe before patent protection ends and generic competition begins. Moreover, the pharmaceutical industry has faced and continues to face a huge increase in the cost of developing new drugs while the number of approved drugs has declined (DiMasi et al., 2003; Terblanche, 2008; Dubey and Dubey, 2010; Kaitin and DiMasi, 2011; Pammolli et al., 2011). Only two out of ten marketed drugs produce revenues that match or exceed their average R&D costs before losing patent protection (Vernon et al., 2010), which typically lasts for 20 years (Terblanche, 2008). The successful launch of a new drug will pave the way for a pharmaceutical company's performance, which then enables R&D for new products in the future (Terblanche, 2008). Under these circumstances, it is important to elucidate pharmaceutical NPLs and find new ways to manage this increasingly challenging and complex activity.

The launch phase is the last but also the most critical, expensive, and riskiest phase of the new product development process (Di Benedetto, 1999; Chen et al., 2007;

Chiesa and Frattini, 2011). While companies commit enormous amounts of time, financial, and managerial resources, the average failure rate of NPLs has been as high as 40% in new consumer and industrial products (Hultink et al., 2000), and more than 60% in high-tech industries (Goldenberg et al., 2001; cf. Cierpicki et al., 2000). The average failure rate of NPLs has still remained as high as 40-50% (Chiesa and Frattini, 2011). Thus, both academics and practitioners have a substantial interest in seeking the most relevant antecedents for successful NPLs.

NPL has been and still is relatively under-researched and discussed in the academic literature (Di Benedetto, 1999; Gultinan, 1999; Garrido-Rubio and Polo-Redondo, 2005; Fraenkel, 2008; Chiesa and Frattini, 2011). The prevailing NPL research in general business literature has mainly concentrated on product advantage (e.g. Henard and Szymanski, 2001; Szymanski et al., 2007; Evanschitzky et al., 2012), and strategic and tactical launch activities and their links to success (e.g. Hultink et al., 1997 and 2000; Di Benedetto, 1999; Gultinan, 1999; Hultink and Robben, 1999). The studies of companies' strategic orientations have emphasized a general focus on customers and competitors predicting new product performance through the widely studied concept of market orientation (e.g. Cano et al., 2004; Kirca et al., 2005).

Although there is a vital need for successful product launches in the pharmaceutical industry, the literature review reveals a scarcity of NPL-related research in this specific industry setting. The marketing literature on pharmaceuticals has mainly focused on the order of market entry and the marketing mix, including the 4Ps, i.e. product, price, place and promotion, related topics (Stros and Lee, 2014). More specifically, the mainstream of pharmaceutical NPL-related literature emphasizes product superiority compared to that of competitors (Becker and Lillemark, 2006; Terblanche, 2008) and suggests that new drugs are commercialized through careful strategic decisions (Trim and Pan, 2005; Amsbaugh and Pitta, 2006; Rod et al., 2007; Stros et al., 2009) and supported by tactical marketing mix activities (Amsbaugh and Pitta, 2006; Rod et al., 2007; Stros et al., 2009; Stros and Lee, 2014) and sales force management (Ruzicic and Danner, 2007; Fraenkel, 2011).

Only a limited number of studies have focused on the relational aspects that emphasize the importance of customer relationships in pharmaceutical NPLs, although relationship marketing has been one of the dominant paradigms within industrial

marketing research (e.g. Möller and Halinen, 2000) and is a common business practice in pharmaceutical sales (Scharitzer and Kollarits, 2000; Wright and Lundstrom, 2004; Rod and Saunders, 2009; Clark et al., 2011). The importance of the relationship approach has been identified in the pharmaceutical industry and implicitly practiced for quite some time. However, it has been argued that more explicit adoption and demonstration is needed (Rod and Saunders, 2009). As a company's networks of relationships form a critical context in the business markets – which both enables and constrains corporate performance (Ritter et al., 2004), and because companies have invested heavily in managing relationships (e.g. Reinartz et al., 2004), the relationship approach is seen as providing a fruitful alternative determinant that complements current knowledge about the key antecedents of launch performance. In particular, the need for a customer-focused orientation that complements the traditional sales and marketing approach – in the pharmaceutical industry context (Burmam et al., 2011) – is supported by recent studies pointing out the crucial role of networks in facilitating the successful commercialization of radical innovations (e.g. Story et al., 2011; Aarikka-Stenroos et al., 2014; Aarikka-Stenroos and Lehtimäki, 2014; Sandberg and Aarikka-Stenroos, 2014)

Overall, the pharmaceutical NPL literature is highly fragmented and focuses on a narrow set of themes at once, and thus a holistic overview of key NPL success determinants has not been obtained. Furthermore, the scarcity of customer relationship aspects and how they link to NPL in the pharmaceutical industry demonstrates an evident need for further academic study. This thesis contributes to existing NPL literature by providing a holistic and comprehensive overview on the key determinants of NPL success in the pharmaceutical industry by emphasizing the relationship approach and its role and impact on launch performance.

## **1.2 Positioning in the healthcare context**

The pharmaceutical industry has an essential role within the healthcare system. Pharmaceutical companies develop, manufacture and supply medicinal drug products and vaccines through distribution networks and wholesalers to pharmacies, hospital pharmacies, and veterinarian clinics. These pharmaceutical products are used in curing

and preventing diseases, have diagnostic purposes and relieve symptoms of illness in patients and animals. In consequence, medication provides several valuable direct and indirect benefits for individuals and society by lengthening the lifetime of people and improving their ability to work and quality of life.

A new medicinal proprietary drug product is typically an innovation to cover a clearly unmet medical need. Typically, meeting this need undergoes a long and costly R&D process with several non-clinical and clinical studies for marketing authorization. In addition to these proprietary products, generic products play a significant role in healthcare. A generic drug consists of a patent-expired active ingredient requiring minor scale product development activities before marketing authorization (Prasnikar and Skerlj, 2006). The generic substitution and the reference price system have increased competition in the Finnish pharmaceutical market (Kannisto and Jormanainen, 2010) and lowered prices (Aalto-Setälä, 2008), thus providing savings in healthcare costs.

Several stakeholders are needed in order to bring a new medicinal drug product to market. First of all, the regulatory authorities must evaluate a new drug as meeting the applicable requirements for efficacy, safety and quality. After that, they grant the marketing authorization for a drug. The national pricing authorities confirm or reject reimbursement and set a reasonable wholesale price for a new medicinal product according to the national policies and regulations of a nation state. However, in the Finnish healthcare context, tax-based health insurance is only one part of the multi-channel funding model. Hospital medicines are procured through competitive bidding by hospital districts.

Following marketing authorization, a pharmaceutical company can place a new drug on the market and start promotional activities. The laws and regulations concerning pharmaceutical marketing vary from country to country. According to Finnish law, the sales and marketing of prescription medicines can only be targeted at healthcare professionals who are entitled to prescribe or dispense medicines and need pharmaceutical information in their work. These professionals include physicians, dentists, veterinarians, and pharmacists. Only over-the-counter medicines, which are available without prescription and used in self-care, may be marketed to consumers. Since pharmaceutical companies have commercial interests in their operations in the healthcare environment, the ethical considerations have been taken into account by

controlling pharmaceutical product promotions and by establishing the voluntary self-regulation of the pharmaceutical industry (e.g. Pharma Industry Finland, 2014a).

As presented above, the common features and challenges faced in the pharmaceutical industry are global, although each country's healthcare system is unique. Hence, this thesis focuses on a country and market environment where there are separate parties for decision-making (i.e., physician), paying for (i.e., national health insurance or insurance company), and end using (i.e., patient) with respect to a new drug. This specific characteristic of the pharmaceutical industry exemplifies the business-to-business (B2B) industrial marketing setting that focuses on exchange between buyers (i.e. physicians) and sellers (i.e. a pharmaceutical company) (Dwyer et al., 1987; Clark et al., 2011). In addition to this common perspective on customers, customership can be seen as a wider concept of different stakeholders in the present-day pharmaceutical industry setting. In addition to physicians, stakeholders can include pricing authorities, budget holders, formulary decision-makers, advocacy groups and nurses, to mention a few examples. However, this thesis considers physicians as customers and focuses on the relationship of physicians to the pharmaceutical industry, but aims to extend contributions to other relevant stakeholders when applicable.

As physicians have a key role in decision-making that is related to the drug treatments of patients, they face relationship-marketing activities, in which pharmaceutical company representatives meet physicians with the intent of establishing and maintaining customer relationships (Wright and Lundstrom, 2004; Clark et al., 2011). This physician-pharmaceutical industry relationship has faced plenty of criticism during the last decade because it seemingly has a contradiction at its core: the relationship between a physicians' autonomy and the commercial interests of the pharmaceutical companies (Abbasi and Smith, 2003; Moynihan, 2003a; Brennan et al., 2006; Angell, 2009). Consequently, several studies have attempted to disentangle and increase transparency between physicians and the pharmaceutical industry (Moynihan, 2003b; Stoessel, 2008; Krumholz, 2009; Robertson et al., 2009; Jack, 2011; European Federation of Pharmaceutical Industries and Associations, 2014b; World Medical Association, 2014).

### **1.3 Structure of the thesis**

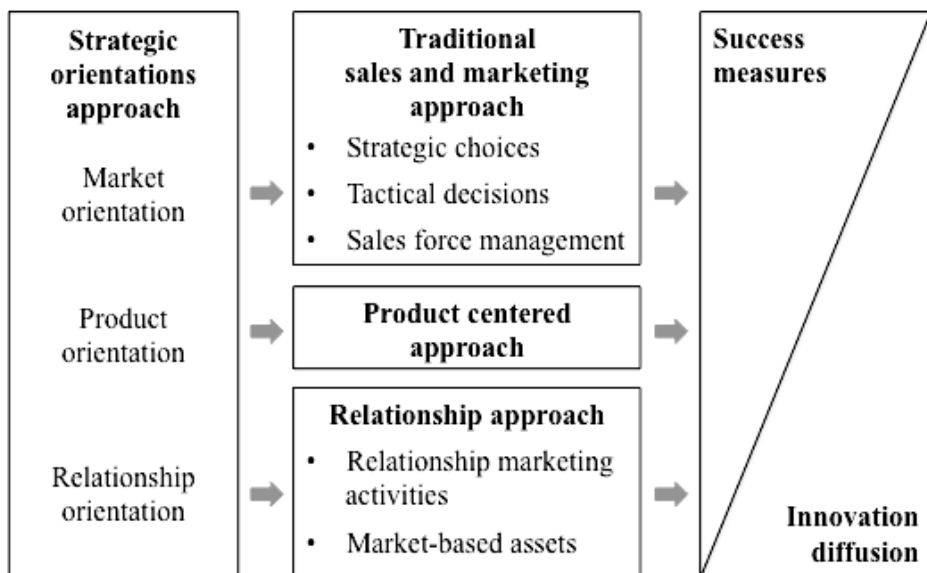
This thesis builds on four original publications that examine the determinants of NPL success in the Finnish pharmaceutical industry. The examination is conducted from different perspectives and with different research methods. More specifically, emphasis is placed on the role and impact of determinants of NPL success on launch performance. The original publications are presented at the end of this thesis.

The structure of this thesis is organized as follows. The thesis starts with a discussion of the extant NPL literature relevant to the research phenomenon from both the general business and the pharmaceutical perspectives. The comprehensive overview of the NPL literature provides a theoretical framework by covering the theoretical approaches of the study and the key concepts it applies. Then, the methodology section describes and justifies the design, sampling, data collection and analyses. The key empirical results are summarized and discussed in the light of the study aims that focus on the relationship approach in NPL. The thesis concludes by highlighting its theoretical contributions to the existing NPL literature and its practical managerial implications as well as suggesting avenues for future research.



## 2 Overview of the literature on launching new products

The NPL literature review presents four different theoretical approaches: product-centered, traditional sales and marketing, strategic orientations and relationship approaches. First, product-centered and traditional sales and marketing approaches are introduced representing a well-established ground for NPL literature. Then, strategic orientations approach are presented since they have received an increasing interest in the NPL literature during recent years, followed by the largely neglected relationship approach. These approaches – together with success measures and the theory of innovation diffusion – illustrate the main research streams in the NPL context. The presumptions of the approaches vary and all of them highlight certain determinants of success in the NPL context, but do so from different perspectives. The selected theoretical approaches and the key concepts form a theoretical framework for this thesis (Figure 1).



**Figure 1.** *Theoretical framework and key concepts*

## **2.1 Product-centered approach**

The product-centered approach represents the NPL literature stream, which focuses on innovation and the concept of product advantage. The product advantage refers to the benefits that customers receive from a new product in relation to the competition already on the market (Calantone and Di Benedetto, 1988; Henard and Szymanski, 2001), emphasizing uniqueness, innovativeness and the superior aspects of the new product. Furthermore, product advantage has been seen as a critical factor referring to “the customer's perception of product superiority with respect to quality, cost-benefit ratio, or function relative to competitors” (Montoya-Weiss and Calantone, 1994; p. 415). The product advantage, representing an innovation perspective in NPL-related literature, underlines the fact that launch performance is principally achieved by providing better products for customers. Rogers (2003), in his seminal theory of innovation diffusion, proposed that product advantage is one of a product's characteristics that is positively related to new product adoption (see chapter 2.6).

A considerable amount of extant business studies have found a positive and significant link between product advantage and performance in the NPL context (e.g. Kleinschmidt and Cooper, 1991; Montoya-Weiss and Calantone, 1994; Gatignon and Xuereb, 1997; Song and Parry, 1997; Henard and Szymanski, 2001; Langerak et al., 2004; Szymanski et al., 2007). Hence, it can be expected that product advantage positively influences the performance of a new product because it increases the positive perceptions of customers about the product – in relation to its competition, thus speeding up customer adoption (e.g. Rogers, 2003). On the other hand, highly innovative products (i.e. major or radical innovations) might influence new product performance in negative ways due to a fear of novelty and the resulting resistance of customers to adopt the product (Lee and O'Connor, 2003; McNally et al., 2010; Kuester et al., 2012). Although recent meta-analyses examining the relationship between product innovativeness and new product success show conflicting evidence on the link, the performance relationship has been found to be mostly positive (Henard and Szymanski, 2001; Szymanski et al., 2007; McNally et al., 2010; Evanschitzky et al., 2012).

Simultaneously, the mainstream of current pharmaceutical NPL-related literature emphasizes product superiority compared with that of competitors

(Terblanche, 2008). Especially in the research-based pharmaceutical firms, it is still the dominant logic that a heavy emphasis on R&D produces innovative and superior products that have a product advantage (Terblanche, 2008; Valverde, 2010). Thus, product differentiation (Yeoh, 1994) and product innovation have been identified as two key success factors for pharmaceutical industry (Gassmann et al., 2004; Kvesic, 2008; Stros et al., 2009; Dubey and Dubey, 2010; Stros and Lee, 2014).

Product advantage can also be seen as a mediating mechanism between a company's strategic orientations (see chapter 2.3) and launch performance (see chapter 2.5). The mediating role of product advantage has previously been studied by focusing only on the link between market orientation and new product performance (Langerak et al., 2004). However, several researchers have suggested investigating further relevant mediators in order to understand better why certain new products are more successful than others (Szymanski et al., 2007; Evanschitzky et al., 2012).

## **2.2 Traditional sales and marketing approach**

### *2.2.1 Strategic choices*

As comprehensively summarized by Calantone and Di Benedetto (2007), NPL decisions and/or activities have typically been broadly divided into two categories: strategic or tactical. The strategic choices are difficult or expensive to change at a later stage of the launch process, whereas the tactical decisions are easier to modify and strongly influenced by the strategic choices that have already been taken (Di Benedetto, 1999).

The NPL literature review indicates that strategic choices focus mainly on product- and market-related decisions – as presented in the classic literature on strategy (e.g. Ansoff, 1965). The most commonly presented strategic choices in NPL literature are the definition of launch objectives (Talke and Hultink, 2010a), the gathering of market information, such as market research, market testing and customer feedback (Di Benedetto, 1999; Calantone and Di Benedetto, 2007), clearly defined launch strategy (Hultink et al., 1997, 1998, 1999 and 2000; Hsieh et al., 2006), market segmentation for identifying an appropriate target market (Talke and Hultink, 2010a; Chiesa and Frattini, 2011), product positioning for the target market (Talke and Hultink, 2010a; Chiesa and

Frattini, 2011), and the timing of the launch (Di Benedetto, 1999; Hultink and Robben, 1999; Prasnikar and Skerlj, 2006; Calantone and Di Benedetto, 2007; Chiesa and Frattini, 2011).

The literature review reveals a similar division between strategic choices and tactical decisions in the pharmaceutical industry (Trim and Pan, 2005). The NPL strategy model shows that product strategy (i.e. a product's image and branding), market strategy (i.e. market targeting and competitor-related functions), and company strategy (i.e. a company's culture, mission and NPL process) compose the key strategic choices for pharmaceutical companies and are influenced by product, regulatory, technological and geographical factors (Trim and Pan, 2005). Furthermore, the pharmaceutical NPL literature emphasizes strategic choices, such as product positioning (Harms et al., 2002; Datamonitor, 2008; Stremersch and Van Dyck, 2009), market segmentation (Burmman et al., 2011), market research (Bogan and Wang, 2000; Harmancioglu et al., 2009), market access communication strategy toward key decision-makers in the introduction of a new drug (McGrath, 2010) as well as launch timing and the order of market entry (Berndt et al., 2002; Corstjens et al., 2005; Stros et al., 2009; Stros and Lee, 2014). Particularly in the generic pharmaceutical industry, the first products on the market tend to achieve a high market share, while building entry barriers for competitors and creating brand awareness for their products (Prasnikar and Skerlj, 2006).

The links between the above presented strategic choices and new product success have been demonstrated in the general literature on NPL (Hultink et al., 1997, 1998, 1999 and 2000; Hultink and Robben, 1999; Di Benedetto, 1999; Calantone and Di Benedetto, 2007; Talke and Hultink, 2010a). However, the corresponding links between strategic choices and launch performance have only rarely been studied in the pharmaceutical NPL context, except in simulation studies that demonstrate that the order of entry, marketing efforts and a product's quality attributes positively affect market share (Berndt et al., 2002).

### *2.2.2 Tactical decisions*

Compared to the strategic choices, which answer what, where and when questions, the tactical decisions represent how to execute a launch in detail (Hultink et

al., 1997; Guiltinan, 1999; Garrido-Rubio and Polo-Redondo, 2005). According to Guiltinan (1999; p. 518), “launch tactics are the decisions and activities that are primarily used to clarify or leverage relative advantages and to demonstrate or enhance compatibility to the target market”. Typically, the tactical decisions follow strategic choices (Di Benedetto, 1999; Calantone and Di Benedetto, 2007). Furthermore, the poor execution of the marketing activities is said to be a reason for high failure rates (Harmancioglu et al., 2009).

Tactical decisions, or launch tactics, are classically described as the marketing mix, including the 4Ps, i.e. product, price, place and promotion (Kotler, 1984; Hultink et al., 1997, 1998, 1999 and 2000; Di Benedetto, 1999). In addition to the widely studied concept of the marketing mix, commonly presented tactical decisions in the NPL literature are a sufficient marketing budget (e.g. Narayanan et al., 2004), resources (e.g. Di Benedetto, 1999) and the proficient execution of the marketing plan (e.g. Harmancioglu et al., 2009). Moreover, selling, technical support and launch management are seen as tactical decisions (Di Benedetto, 1999).

Factors related to the marketing mix are also considered tactical decisions in the pharmaceutical industry context (Trim and Pan, 2005; Amsbaugh and Pitta, 2006; Stros et al., 2009; Stros and Lee, 2014). Rod et al. (2007; p.180) have noticed a need for “a more systematic approach to segmentation, targeting and positioning through branding and the marketing mix” for optimizing pharmaceutical return-on-investment. Furthermore, McGrath (2010) argues that a lack of effective market access activities, such as advisory board meetings, health outcome toolkits, advance notification documents, service delivery adjustments, and payer activities, are amongst the most common reasons why new drugs fail to reach patients in a timely manner.

Similarly, compared to the strategic choices, the link between tactical decisions and launch performance has been widely studied regarding tactical decisions as key NPL success factors in the general business literature (Di Benedetto, 1999; Hultink et al., 1997, 1998, 1999 and 2000; Calantone and Di Benedetto, 2007). However, the link to successful launch performance has not been specifically studied in the pharmaceutical NPL context, excluding a case study (Datamonitor, 2008) and a survey study of physicians (Pitt and Nel, 1988), which demonstrated the effectiveness of marketing mix activities.

### 2.2.3 *Sales force management*

Sales force management has been defined as “analysis, planning, implementation and control of sales force activities including designing sales force strategy and structure as well as recruiting, selecting, training, supervising, compensating and evaluating a company’s sales people” (Kotler and Armstrong, 2009). The effective management of a sales force is a requirement for success in business markets (Avlonitis and Panagopoulos, 2010).

In the NPL context, sales force management refers to management activities specific to sales force operations during the launch phase of a new product (cf. Fraenkel, 2011). This includes sales force management-related strategic elements, which need to be considered in NPL, such as the composition of the sales force and its correct size, as well as adequate effort and commitment to a new product, control issues, an incentive system, and internal marketing and training with regard to the launched product (Cooper, 1998; Di Benedetto, 1999; Hultink and Atuahene-Gima, 2000; Fraenkel, 2011).

The traditional role of sales is changing “from a function to a process; from an isolated activity to an integrated one; and is becoming strategic rather than operational” (Storbacka et al., 2009; p. 890). The strategic role of sales is typically rooted in the relationship approach that can be regarded as aiming at simultaneously making sales and developing long-term relationships with major customers (e.g. McDonald et al., 1997; Srivastava et al., 1999; Weitz and Bradford, 1999; Ingram, 2004; Mantrala et al., 2008; Geiger and Guenzi, 2009; Storbacka et al., 2009; Avlonitis and Panagopoulos, 2010; Davies et al., 2010). In practice, the new role of sales is demonstrated through concepts such as relationship selling (e.g. Crosby et al., 1990; Frankwick et al., 2001), consultative selling (Liu and Leach, 2001), or value-based selling (e.g. Terho et al., 2012; Töytäri et al., 2011) all of which share the idea of value co-creation while interacting with the customer, hence emphasizing a relational sales approach (Vargo and Lusch, 2004; Grönroos, 2008; Grönroos and Helle, 2010). In summary, the prevailing conceptualizations concerning sales put an emphasis on building and maintaining customer relationships rather than merely optimizing a series of separate transactions.

Several studies show that sales represent a company's key frontline activity in its customer interface and that this has a major influence on the company's performance (Baldauf and Cravens, 1999; Baldauf et al., 2001; Avlonitis and Panagopoulos, 2010). Furthermore, plenty of studies in the NPL context have suggested that the sales force is a critical contributory factor to new product success (Cooper, 1998; Di Benedetto, 1999; Hultink and Atuahene-Gima, 2000; Fraenkel, 2011). Most importantly, the critical role of sales force management as a key marketing decision area for business performance (Stremersch and Van Dyck, 2009) and in the pharmaceutical NPL context has been demonstrated (Fraenkel, 2011).

Sales representatives' personal selling (or detailing) has traditionally been seen as one of the most important aspects in the selling and marketing of a new product in the pharmaceutical industry (e.g. Pitt and Nel, 1988; Bogan and Wang, 2000; Tengilimoglu et al., 2004; Stros et al., 2009; Clark et al., 2011; Fraenkel, 2011), but is also considered the most expensive pharmaceutical marketing activity (Black, 2005). The aim of personal selling is to inform physicians about the properties of a product with the expectation of influencing a physician's prescription behavior (e.g. Gönül et al., 2001; Mizik and Jacobson, 2004; Black, 2005). This traditional sales force operation has faced several challenges, such as pressures on cost savings, the issue of access to physicians, and tightening regulations on promotion (Rod et al., 2007; Terblanche, 2008; Fraenkel, 2011), thus improvements in sales force effectiveness and NPL are needed (Gönül et al., 2001; Terblanche, 2008; Fraenkel, 2011). Fraenkel's (2011) study of the key success factors for sales force readiness during NPL in the Swedish pharmaceutical industry demonstrated that the strategic elements related to a sales force, such as adequate effort and commitment toward a new product, control issues, an incentive system, as well as internal marketing and training, need to be considered during a pharmaceutical NPL.

In addition to the direct effect on the success of a launch, sales force management can also be seen as a mediating factor between a company's organizational culture and launch performance. As a sales force plays an important role in executing marketing strategies (Cross et al., 2001), sales force management can be assumed to be a key activity through which a relationship-oriented culture is transformed into performance in the NPL context. Consequently, when a company has a strong desire to

establish, maintain, and leverage customer relationships, its relationship-focused activities should play a key role in sales force management and on frontline levels in the organization in order to accomplish launch performance. The company's relationship orientation may direct the organization's attitude toward adopting a sales force management that has a strong relational perspective (cf. Jayachandran et al., 2005).

### **2.3 Strategic orientations approach**

During recent years, academic business scholars have devoted increasing interest to the strategic orientations of companies in their efforts to find determinants for NPL success (Gatignon and Xuereb, 1997; Talke and Hultink, 2010a; Mu and Di Benedetto, 2011). A company's strategic orientations refer to the "dimension of organizational culture that provides the organization's values and priorities in interactions with its marketplace – both customers and competitors – and influences more specific strategies and tactics" (Noble et al., 2002, p. 27). Hakala (2011) has defined orientation as an organizational culture comprising values and behavioral norms directing and influencing managerial decisions and the activities of a company as well as ways of working in the organization. Talke and Hultink (2010a) examined the same phenomenon by employing the term 'corporate mindset,' which was defined as "a firm's general posture toward corporate behavior and performance" (p. 220).

This organizational culture perspective on the strategic orientations of companies represents the deeply embedded values and beliefs that establish the norms for appropriate behavior (Deshpandé et al., 1993) and drive the choice of means to accomplish the desired outcomes (Moorman, 1995; cf. Day, 2000), which can have an effect on a company's performance (Zhou et al., 2005). Although the concepts of the strategic orientations and organizational culture of companies are closely intertwined, the strategic orientations may act as "guiding principles that influence a firm's marketing and strategy-making activities" (Noble et al., 2002, p. 25). Strategic orientations are company-specific and complex capabilities that can lead to competitive advantages (Day, 1994; Hunt and Morgan, 1995).

Although a basis for the role of strategic orientations in NPL has been established (Talke and Hultink, 2010a), numerous gaps still exist regarding the role and



relative impact of different types of orientations and the mechanisms by which they affect launch performance, especially in the B2B context. While market orientation (see Chapter 2.3.1) has dominated the research concerning strategic orientations in the NPL context, “several alternative strategic orientations can be considered at the same level of abstraction as market orientation” (Noble et al., 2002; p. 29). Interestingly, the single orientation research approach has been considered inadequate (e.g. Noble et al., 2002; Grinstein, 2008a) and scholars have argued that combining alternative orientations enables companies to perform better (Grinstein, 2008a). In fact, the literature review reveals that multi-orientation studies in the NPL context remain scarce except for Mu and Di Benedetto (2011) who examined market, technology, entrepreneurial and networking orientations in new product commercialization. However, the networking orientation was seen as seeking intercompany network partners in order to support superior product development (Mu and Di Benedetto, 2011) and excluded customer relationship aspects.

In order to compose a comprehensive understanding of the role of different strategic orientations affecting launch performance, this literature review focuses on three alternative strategic orientations: market orientation, product orientation and relationship orientation, which represent different complementary aspects affecting NPL.

### *2.3.1 Market orientation*

Market orientation is one of the most studied topics in the extant marketing literature and it refers to the implementation of the marketing concept (Lafferty and Hult, 2001; Cano et al., 2004; Kirca et al., 2005; van Raaij and Stoelhorst, 2008). Market orientation studies can be divided into either behavioral or cultural conceptualizations. Kohli and Jaworski (1990; p. 3) define market orientation as “the organization wide generation, dissemination, and responsiveness to market intelligence” emphasizing its behavioral perspective. On the other hand, Narver and Slater’s (1990; p. 20) definition of market orientation as “the organization culture...that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers” highlights the cultural perspective. However, both perspectives share the

common idea that the ultimate objective of a market-oriented company is to create superior value for the customer (Kohli and Jaworski, 1990; Narver and Slater, 1990).

In addition to these customer-centric definitions of market orientation, several studies have acknowledged the competitor component of market orientation (e.g. Narver and Slater, 1990; Gatignon and Xuereb, 1997; Langerak et al., 2004; Gotteland and Haon, 2010). Narver and Slater (1990; pp. 21-22) define competitor orientation as “a seller understands the short-term strengths and weaknesses and long-term capabilities and strategies of both the key current and the key potential competitors” whereas Gatignon and Xuereb (1997, p. 78) define it as “the ability and the will to identify, analyze, and respond to competitors’ actions”. In addition to the customer and competitor focus, the concept of market orientation is commonly complemented by a third component that varies from one study to another, usually this third component is inter-functional coordination (e.g. Narver and Slater, 1990; Langerak et al., 2004).

The majority of market orientation studies have confirmed the significant positive relationship between market orientation and business performance in general (e.g. Jaworski and Kohli, 1993; Slater and Narver, 1994; Kirca et al., 2005; Shoham et al., 2005; van Raaij and Stoelhorst, 2008; Akomea and Yeboah, 2011). The wealth of these studies acknowledges the significant role and importance of market orientation in business literature. However, non-significant or mixed direct relationships have also been reported between market orientation and general business performance (Langerak, 2003).

Market orientation has been a predominant strategic orientation perspective in NPL research. The majority of studies have indicated a positive direct relationship between market orientation and new product success (e.g. Slater and Narver, 1994; Atuahene-Gima, 1995; Pelham and Wilson, 1996; Appiah-Adu, 1997; Appiah-Adu and Singh, 1998; Baker and Sinkula, 1999; Subramanian and Gopalakrishna, 2001; Matsuno et al., 2002; Kirca et al., 2005; Ledwith and O’Dwyer, 2009; Carbonell and Escudero, 2010; Mu and Di Benedetto, 2011; Wong and Tong, 2013). The rationale for this positive relationship lies in the way that market-oriented companies invest in understanding their customers and competitors. This helps them to satisfy customer needs and attract new customers, eventually leading to better financial performance (Homburg and Pflesser, 2000). However, non-significant relationships between market

orientation and new product success have also been reported (e.g. Greenley, 1995; Appiah-Adu and Ranchhod, 1998; Langerak, 2003; Langerak et al., 2004; Paladino, 2007).

Although a rich body of literature on market orientation and new product success exists, most of the existing studies have ignored the role of the mediating mechanisms through which market orientation affects launch performance (Mu and Di Benedetto, 2011; cf. Shoham et al., 2005). The few exceptions have demonstrated the idea that product advantage (Langerak et al., 2004), new product creativity (Im and Workman, 2004), new product development proficiency and product meaningfulness (Hong et al., 2013) are the key mediating variables explaining the link between market orientation and launch performance. These mediating effects are logical since market orientation enables companies to gain deep customer and competitor insights, thereby helping them to innovate and develop superior products (Langerak et al., 2004; Grinstein, 2008b) and leading to higher customer acceptance and better financial performance for the company. In addition, the role of organizational learning has been found to mediate the link between a combination of strategic orientations and the commercialization performance of a new product (Mu and Di Benedetto, 2011). However, the exact mechanisms by which market orientation affects launch performance remain obscure, which means there is a need to find more complete explanations.

While numerous studies have shown the importance of market orientation in NPL, the heavy emphasis on market orientation can also be seen as a limitation. The predictive power of market orientation has been argued to be still an open issue (Langerak, 2003). However, many scholars also state that a solely market-oriented view can be risky for company performance because an overemphasis on customers might constitute a barrier to the commercializing of new technology and result in a decrease in a company's innovative competence (Christensen and Bower, 1996; Zhou et al., 2005), and therefore lead to only marginally new products (e.g. Tauber, 1974; Bennett and Cooper, 1981; Gatignon and Xuereb, 1997; Voss and Voss, 2000; Langerak et al., 2004; Zhou et al., 2005). Similarly, the extant research on a company's market orientation in the NPL context to date neglects almost completely the role of customer *relationships*, although the importance of business relationships and relationship marketing for

business performance have been widely noted (e.g. Grönroos, 2004; Morgan and Hunt, 1994; Möller and Halinen, 2000). Due to this criticism, this study broadens the focus on the two complementary strategic orientations in order to overcome the limitations addressed above and to better understand the role of alternative strategic orientations regarding launch performance as a whole.

### *2.3.2 Product orientation*

The concept of product orientation offers a contrasting perspective to market orientation's external focus on customers and competitors. Product orientation refers to a company's product-centered organizational culture in which the development and commercialization of new and innovative products are considered key factors for success (Schmidt, 1995; Gatignon and Xuereb, 1997; Narver et al., 2004; Zhou et al., 2005). The product orientation can be regarded as the result of a technology and product-oriented management that focuses "energy on making good products and improving them over time" (Kotler, 1984, p. 17; Gatignon and Xuereb, 1997).

The concept of product orientation has been discussed in the marketing literature, although it has only received limited empirical attention (cf. Voss and Voss, 2000). This applies in the NPL context as well, although the importance of new product development (e.g. Krishnan and Ulrich, 2001) and positive relationships between product innovativeness and/or product advantage with new product success have been widely reported (e.g. Kleinschmidt and Cooper, 1991; Hurley and Hult, 1998; Henard and Szymanski, 2001; Szymanski et al., 2007; Evanschitzky et al., 2012).

Prior research has also noted the value of product orientation for new product development (e.g. Song and Parry, 1997) but only a few studies have identified the relationship between product orientation and new product success (Narver et al., 2004; Mu and Di Benedetto, 2011). This implies that product orientation can also play a positive role in launch performance since a company's focus on R&D and desire to develop superior products for a market can lead to product advantage (Zhou et al., 2005), and thereby improve customer adoption and new product performance (Montoya-Weiss and Calantone, 1994; Henard and Szymanski, 2001).

Furthermore, similarly compared to market orientation, the existing studies have ignored the role of mediating mechanisms – through which product orientation affects launch performance (cf. Mu and Di Benedetto, 2011). As product orientation is positively associated with innovations, especially with technology-based innovations (Zhou et al., 2005), and product advantage has been confirmed as the most important success factor in new product performance (Henard and Szymanski, 2001; Szymanski et al., 2007; Evanschitzky et al., 2012), product advantage can be assumed to mediate the link between product orientation and performance.

Although the concept of product orientation has been generally criticized for ignoring key customer and competitor perspectives in innovation, focusing on a product has the potential to lead to better performance compared to having a customer focus, at least in particular contexts (Voss and Voss, 2000). In addition, Cooper (1984) has stated that an innovation's commercial performance is highly linked to a strong R&D orientation that can stem from inside the company. Importantly, as several authors have suggested that a highly market-oriented culture can lead to imitations and to only marginally new products (cf. Bennett and Cooper, 1981; Langerak et al., 2004), the assessment of a company's product and market orientation can create novel knowledge regarding the role of a company's internal versus external focus on performance in the NPL context. For these reasons, this study complements market orientation with the product-oriented perspective by providing an alternative, significantly different internal company view on NPL. Arguably, the simultaneous assessment of a company's market and product orientation with respect to performance can create novel knowledge about the role of a company's internal versus external focus on success in the NPL context.

### *2.3.3 Relationship orientation*

The concept of relationship orientation, or the corresponding term: relationship marketing orientation, refers to an organizational culture that considers customer relationships as a key driver of organizational performance, pervading all parts of an organization through a common mindset, shared values, and norms (Day, 2000; Jayachandran et al., 2005). The concept of relationship orientation has been defined “the extent to which a company engages in developing long-term relationships with its

customers” (Sin et al., 2005a, p. 43), and the “desire to engage in a strong relationship with a current or potential partner to conduct a specific exchange” (Palmatier et al., 2008, p. 175). Hence, relationship orientation, including dimensions such as bonding, empathy, reciprocity, trust, shared value, and communication (Yau et al, 2000; Sin et al., 2005b), represents a company’s organizational culture, underlining the implementation of relationship marketing.

Whereas the widely examined concept of market orientation highlights customer needs and competitors at a general level (e.g. Lafferty and Hult, 2001; Cano et al., 2004; Kirca et al., 2005), and product orientation highlights product-related aspects, a relationship orientation provides a more specific customer perspective by emphasizing the importance of establishing and leveraging customer relationships in business (Day, 2000). Thus, relationship orientation can be regarded as one of the strategic orientations of a company (cf. Day, 2000) providing a relational perspective on the buyer-seller dyad (Dwyer et al., 1987; Palmatier et al., 2008).

Despite being the key element determining the effectiveness of relationship marketing (Palmatier et al., 2008), the literature review reveals a scarcity of empirical research examining the link between relationship orientation and business performance in general, especially in the NPL context. Although a few earlier studies have identified relationship orientation as a factor in maintaining a company’s competitive advantage and business performance (Yau et al., 2000; Sin et al., 2002; Tse et al., 2004; Sin et al., 2005a; Winklhofer et al., 2006; Palmatier et al., 2008; Alrubaiee and Al-Nazer, 2010; Stewart et al., 2012; Salojärvi et al., 2015), empirical studies on relationship orientation in the NPL context have not been published.

Due to the widely noted importance of the relationship marketing concept in business performance (e.g. Morgan and Hunt, 1994; Grönroos, 1997; Berry, 2002; Palmatier et al., 2006), the concept of relationship orientation can be expected to play a significant role in explaining launch performance. Due to the fact that relationship orientation considers customer relationships a key driver of organizational performance (e.g. Day, 2000; Jayachandran et al., 2005), it can be assumed to have a substantial impact on launch performance based on the theory of innovation diffusion (see chapter 2.6). More specifically, a company’s relationship orientation might enable the faster and more extensive diffusion of innovation (e.g. D’Arcy, 2009; Iyengar et al., 2011) through

the improving of customer participation and the establishing of stronger relationships with customers when launching new products (e.g. Fang, 2008), resulting in lowered innovation diffusion barriers (cf. Talke and Hultink, 2010b) as well as an increase in loyal customer relationships and higher sales (e.g. Palmatier et al., 2008). Similarly to other strategic orientations, the mechanisms through which relationship orientation affects launch performance remain unstudied.

In addition to the seller company's perspective, relationship orientation can also be seen from a buyer's perspective. Palmatier et al. (2008) have identified a buyer's relationship orientation as a factor that determines the effectiveness of a seller's relationship marketing in the B2B context. However, earlier studies on the attitudes of physicians toward the pharmaceutical industry had a limited focus – mainly on sales representatives and gifts in the 1980s and 1990s (e.g. Manchanda and Honka, 2005). Doran et al. (2006) deepened knowledge about the forms of interaction and ethical concerns in the physician-pharmaceutical industry relationship among specialists, but urged further qualitative studies on this relationship. A more thorough understanding of this relationship and its antecedents is essential if we are to achieve a mutually meaningful and beneficial relationship (Manchanda and Honka, 2005; Royal College of Physicians, 2009; Tiner, 2009), and to find an optimal win-win situation for both parties. This would decrease unnecessary and time-consuming sales and marketing activities when limited resources are available and it would help to target marketing activities toward the primary work needs of physicians.

In summary, since the extant strategic orientation literature has neglected the specific role of customer relationships, the concept of relationship orientation would complement the two company strategic orientations discussed above, by aiming to provide novel knowledge not only about the role of customer relationships but also on other relevant stakeholder relationships in the NPL context (cf. Talke and Hultink, 2010b). Furthermore, the examination of the concept of relationship orientation from a buyer's perspective would bring a novel approach to research into the complex physician-pharmaceutical industry relationship.

## **2.4 Relationship approach**

### *2.4.1 Relationship marketing activities*

The traditional sales and marketing approach has faced a ‘paradigm shift’ from transactional marketing toward the relationship marketing concept that focuses on the establishment and maintaining of relationships with customers (e.g. Grönroos, 1994 and 1997; Morgan and Hunt 1994; Gummesson, 1998; Storbacka et al., 2009). The concept of relationship marketing has been one of the dominant paradigms and key research streams in industrial marketing literature and research (e.g. Morgan and Hunt, 1994; Grönroos, 1997; Möller and Halinen, 2000; Coviello et al., 2002; Palmatier et al., 2006; Wong et al., 2010). According to Morgan and Hunt (1994, p. 22), “[r]elationship marketing refers to all marketing activities directed toward establishing, developing, and maintaining successful relational exchanges”. Relationship marketing can also be perceived from a more philosophical perspective that emphasizes the primary importance of relationships in business (e.g. Gummesson, 1998; Grönroos, 2008).

The overall importance of the relationship marketing concept in business performance has been widely noted (e.g. Morgan and Hunt, 1994; Grönroos, 1997; Berry, 2002; Palmatier et al., 2006). In fact, relationship marketing has been found to be a central predictor of business performance because it generates stronger customer relationships that enhance sales growth, market share and profits (e.g. Crosby et al., 1990; Morgan and Hunt, 1994; De Wulf et al., 2001; Palmatier et al., 2008). Trust, commitment, and gratitude are the key elements behind the effectiveness of relationship marketing on performance (Morgan and Hunt, 1994; Palmatier et al., 2006; Palmatier et al., 2009). On the other hand, relationship marketing has also been criticized for being ineffective or even counterproductive in certain circumstances (Cao and Gruca, 2005). Ineffective relationship management can be an important contributor to new product failure in technology-based industrial markets (Athaide and Klink, 2009; Athaide and Zhang, 2011).

Despite the apparent importance of adopting a relational approach to business, empirical evidence on the effectiveness of relationship marketing activities in the NPL context as well as studies concerning how companies actually employ relationships in



the NPL setting remain fragmented and scarce. The existing studies on the topic indicate that relationship-focused activities play a central role in attaining a better launch performance. The recent conceptual and qualitative studies demonstrate the importance of networks in the commercialization of radical innovations (Story et al., 2011; Aarikka-Stenroos et al., 2014; Aarikka-Stenroos and Lehtimäki, 2014; Sandberg and Aarikka-Stenroos, 2014). The current research has also found evidence that close customer interaction during new product development (e.g. Gruner and Homburg, 2000; Von Hippel, 2001; Fang, 2008), as well as the early identification and involvement of opinion leaders (e.g. van Eck et al., 2011) are factors for enhancing the success of new products. Moreover, the active leveraging of a company's present customer relationships through key account management practices (e.g. McDonald et al., 1997) have been shown to be crucial for the successful launch of a new product since existing customers also represent a major group of adopters (see chapter 2.6). Furthermore, customer-related conflict management has an important role in relationship building (e.g. Weitz and Bradford, 1999; Naoui and Zaiem, 2010) and in efficient relationship marketing (e.g. Palmatier et al., 2006).

Particularly in the pharmaceutical industry setting, the instigating of pro-active early market activities aimed at building product awareness among key stakeholders before launch – by involving potential early adopters, for example, through conferences, or providing high-quality training for customers – has been considered important for NPL success (Sandberg, 2002; Black, 2005; Rod and Saunders, 2009). Studies have further stressed the importance of the selection of opinion leaders (see chapter 2.6) as a key marketing decision area for business performance and patient welfare (Stremersch and Van Dyck, 2009). In addition, the need for market access-focused activities aimed at stakeholders and gatekeepers (e.g. decision-makers), who can have a major impact on the adoption of new products, for example, through advisory board meetings, has been noted (McGrath, 2010). Nevertheless, empirical studies have adopted a somewhat narrow view when studying the leveraging of relationships in the pharmaceutical NPL context.

Furthermore, launch performance depends on a broad set of actors and not only customers, highlighting the need to adopt a broad perspective on relationships in the NPL context (cf. Talke and Hultink, 2010b). In other words, it is relevant to take into

account a broader set of stakeholder relationships that affect the adoption of a launched product rather than solely limiting activities to customer-directed efforts for building close relationships. Accordingly, in this thesis, relationship marketing activities refer to a company's activities that are aimed at establishing, leveraging and capitalizing on relationships with its customers and key stakeholders for the successful launch of a new product. As relationship marketing activities focus on improving both the participation of customers and stakeholders and the establishment of customer and stakeholder relationships (e.g. Fang, 2008), they can also result in lowered innovation diffusion barriers (Talke and Hultink, 2010b; see chapter 2.6). Hence, a company's efforts in systematic relationship marketing activities signifies a key means for putting relationship marketing philosophy into practice, but also forms a theoretical link to improved customer acceptance in the NPL context. Thus, the examination of the linkage between relationship marketing activities and launch performance can provide novel insights into the effective implementation of the relationship approach when launching new products.

In addition to the direct link between relationship marketing activities and a successful NPL, these activities can be assumed to mediate the putting of the abstract relationship-oriented organizational culture into practice through concrete frontline activities, thus leading to better customer performance (cf. Stewart et al., 2012). In fact, a company's relationship orientation may direct its organization's attitude toward adopting relationship marketing activities that comprise a strong relational perspective (cf. Jayachandran et al., 2005). In practice, examining the role of relationship marketing activities in the link between relationship orientation and launch performance can provide novel insight into the implementation of relationship marketing philosophy, particularly when launching new products.

#### *2.4.2 Market-based assets*

Market-based assets represent another key concept in the relationship approach to NPL. The concept of market-based assets is rooted in the theory of the resource-based view, emphasizing the achievement of sustainable competitive advantage through unique resources that are challenging to imitate (Wernerfelt, 1984; Srivastava et al.,

1998). These strategically valuable resources include organizational assets (Srivastava et al., 2011), which can be divided into tangible (e.g. prime location) and intangible assets (e.g. strong brand) or capabilities (e.g. efficient processes) (Collis and Montgomery, 2008).

The largely intangible market-based assets refer to “a reservoir of cash flow that has accumulated from marketing activities but has not yet translated into revenue” (Rust et al., 2004, p. 78). The market-based assets can be further categorized as a company’s internal and knowledge focused intellectual assets as well as its externally focused relational assets (Srivastava et al., 1998 and 2001). The relational market-based assets, such as brand equity and customer equity (Rust et al., 2004), and brand awareness, brand preference and built customer base (Grewal et al., 2009) are the “outcomes of the relationship between a firm and key external stakeholders, including distributors, retailers, end customers, other strategic partners, community groups, and even governmental agencies” (Srivastava et al., 1998; p. 5). In other words, relational market-based assets demonstrate that “stronger customer relationships are created when the firm uses knowledge about buyer needs and preferences to build long-term relational bonds between external entities and the firm” (Srivastava et al., 1998; p. 5). Since the concept of market-based assets underlines a company’s investments to customers, they are understood as the accumulated market and customer-related assets, such as company brand, customer base and loyalty, and the strong prior customer relationships of the outcome of a company’s operation in the market, (Srivastava et al., 1998; De Wulf et al., 2001; Srivastava et al., 2001; Rust et al., 2004; Athaide and Klink, 2009; Grewal et al., 2009; Ramaseshan et al., 2013).

The literature on marketing indicates that if a company has appropriate marketing strategies and tactical action in place, they will lead to the accumulation of market-based assets (e.g. Rust et al., 2004; Grewal et al., 2009). Previous studies have demonstrated a positive link between marketing expenditure and company performance through the creation of market-based assets (e.g. Srivastava et al., 1998; Rust et al., 2004; Grewal et al., 2009; Ramaswami et al., 2009). However, this specific link between market-based assets and improved performance has not been studied in the NPL context, although the market-based assets that emphasize established customer relationships might act as a central means for lowering customer adoption barriers to

innovations, therefore improving customer acceptance (Srivastava et al., 1998; Ramaswami et al., 2009; Talke and Hultink, 2010b) and increasing financial performance (Talke and Hultink, 2010b).

In addition to the direct performance link, the concept of market-based assets can be seen as a mediator between a company's strategic orientations and launch performance. According to the theory of innovation diffusion (see chapter 2.6), it can be assumed that market-based assets might mediate the effect of market orientation on customer acceptance by expediting product adoption among customers. Furthermore, the market-based assets might mediate the link between product orientation and launch performance since a company's commitment to developing superior products can help to generate market-based assets and improve launch performance. The market-based assets can also be assumed to mediate the link between the relationship orientation and launch performance due to the proposition that a relationship orientation that emphasizes the importance of customer relationships enhances the opportunities of a company to accumulate customer relational market-based assets (Srivastava et al., 1998), which in turn improve launch performance.

## **2.5 Success measures**

The term success is relative to expectations and refers to the achievement or exceeding of the set milestones or goals. New product success, or even the alternative term of launch performance, can be perceived as the outcome of a complete new product development project that can be measured in terms of both short- and long-term dimensions (De Brentani et al., 2010). Launch performance can also be defined as "the ability of a new product or innovation to avoid failure in the marketplace" (Paladino, 2007; p. 541).

A thorough evaluation of launch performance comprises both customer acceptance and financial performance measures. Since the customer adoption of a new product is essential for improved financial performance and poor customer acceptance is a reason for market failure (Chiesa and Frattini, 2011), the role and impact of different determinants affecting launch performance should be studied from both customer acceptance and financial perspectives (Scharitzer and Kollarits, 2000; Berndt et al., 2002). Therefore, it is considered worthwhile to distinguish between these two

areas of launch performance. Furthermore, since this thesis involves customer- and relationship-focused concepts, it is logical to expect that customer acceptance represents a key measure in explaining how these concepts link to the improved financial performance of a launch.

Customer acceptance refers to customer-related success that plays a key role in attaining broader financial launch targets (e.g. Griffin and Page, 1993 and 1996; Homburg and Pflesser, 2000). Customer satisfaction and customer acceptance are identified “as the most useful customer-based measures of success” at the project level (Griffin and Page, 1996, p. 478). Furthermore, based on the theory of innovation diffusion (see chapter 2.6), customer acceptance represents a key determinant for NPL success as the adoption of a new product by customers is necessary for improved financial performance (Rogers, 2003).

Whereas customer-based success measures relate to customer acceptance, the measures of financial launch performance refer to the overall attainment of financial launch targets relating to sales, market share and profitability (e.g. Montoya-Weiss and Calantone, 1994; Di Benedetto, 1999; Talke and Hultink, 2010a and 2010b). These financial measures have been frequently employed as appropriate tools for measuring success in the NPL literature (e.g. Montoya-Weiss and Calantone, 1994; Di Benedetto, 1999; Kleinschmidt et al., 2007; De Brentani et al., 2010; Talke and Hultink, 2010a and 2010b).

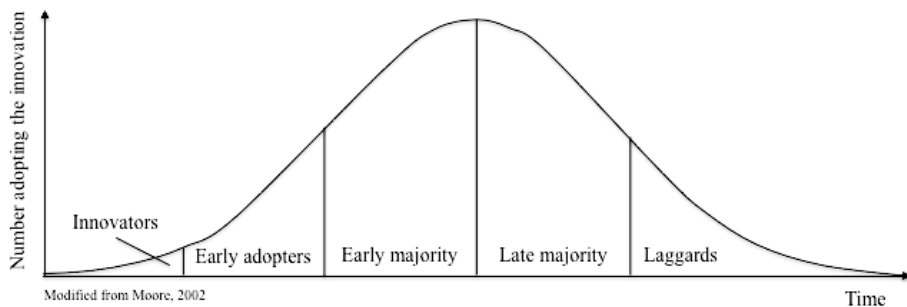
## **2.6 Innovation diffusion**

The seminal theory of innovation diffusion has helped scholars and practitioners understand and manage the market penetration of new products. More specifically, the term describes how an innovation spreads and is diffused throughout a market (Rogers, 2003). This social contagion theory was developed to explain the adoption behavior of innovations by individuals as a function of the knowledge, attitude or behavior toward specific innovations that was displayed by other individuals (Rogers, 2003). Without the adoption of an innovation, the diffusion of the innovation will not occur, since “individual adopter-level adoptions are seen as building blocks of the macro-level phenomenon of diffusion” (Makkonen and Johnston, 2014; p. 325).

The innovation adoption process includes a series of steps, which an individual or an organization goes through in deciding whether or not to adopt a new product and its rate depends, in part, on product characteristics (Guiltinan, 1999). The diffusion theory supposes that several factors influence new product adoption by promoting or delaying the diffusion process, including perceived innovation characteristics such as product advantage, compatibility, complexity, trialability and observability (Rogers, 2003). The individual patterns of adoption have been classically divided into five categories (Table 1), which define how an innovation is adopted in the different phases of a product's lifecycle along the innovation adoption curve (Figure 2) (Moore, 2002; Rogers, 2003).

**Table 1.** *Description of the adopter categories*

Adopter category	Description (Rogers, 2003)
Innovators	Adventurous individuals, who are willing to take risks and bring an innovation inside a system. Interest in novel ideas leads them to communicate and have social relationships outside their local peer network, even abroad. The innovators can manage a high degree of uncertainty and can accept occasional setbacks.
Early adopters	Opinion leaders and respected individuals, who adopt an innovation relatively quickly in a system. They help other peers adopt an innovation and can be seen as change agents for speeding the local diffusion process.
Early majority	The largest adopter category, who adopt an innovation before the majority of the other members of a system, but after deliberating the decision for some time.
Late majority	Sceptical and cautious individuals, who adopt an innovation later than the above categories. Economic necessities and increased peer pressure enhance their decision to adopt. Late majority adopters do not adopt an innovation until most others in their system have already done so.
Laggards	The last set of individuals to adopt an innovation, whose point of reference is the past. They may possess traditional values, can be suspicious of innovations and change agents, and resist innovation.



**Figure 2.** *Innovation adoption curve and the adopter categories*

Some recent studies have focused on innovation diffusion barriers, which represent the challenges and obstacles faced in a new product's commercialization phase, and thus diminish the diffusion of an innovation (Talke and Hultink, 2010b; D'Este et al., 2012; Sandberg and Aarikka-Stenroos, 2014). The restrictive mindset of companies, referring to their internal resistance to innovations (i.e. restrictive organizational culture, and fear of change or failure), and undeveloped networks have been recognized as key diffusion barriers to radical innovations in commercialization literature (Sandberg and Aarikka-Stenroos, 2014). Launch activities have to overcome or lower diffusion barriers that are related to customers and other relevant stakeholders in order to aim for a successful launch (Talke and Hultink, 2010b), especially in the case of radically new products (Kuester et al., 2012; Sandberg and Aarikka-Stenroos, 2014).

The critical role of external opinion leaders in the adoption process of new products has been noted both in general business (e.g. van Eck et al., 2011; Cho et al., 2012) and pharmaceutical literature (e.g. Sandberg, 2002; Corstjens et al., 2005; D'Arcy, 2009; Smith, 2009). In practice, "the adoption of new ideas spreads throughout a population through the observed usage and endorsement of opinion leaders" (Smith, 2009; pp. 293-294). Therefore, in this study context, the previously defined concept of customer acceptance (see chapter 2.5) is divided into two parts: key opinion leaders (KOL) and the majority of other target customers. This has been done in order to represent the early and mainstream market segments. KOL refers to an external medical expert, who is recognized and valued by colleagues, and has a significant influence on his/her peers. Furthermore, the opinion leaders can be classified into clinical leaders and market leaders based on their specific expertise in a certain therapy or disease area and strong clinical research experience. On the other hand, their status as leaders can be based on tight connections to local physician communities (Stremersch and Van Dyck, 2009). The relatively limited number of existing studies on the efficiency of opinion leaders indicates that the involvement of a KOL is an important antecedent for the market penetration of a new drug (Sandberg, 2002; Manchanda et al., 2005; Smith, 2009). The majority of other target customers refers to other physicians, who are potential prescribers of a new drug.

The prescribing of a new drug by physicians is one example of the innovation adoption process. The prescribing behavior of physicians has received wide attention in previous decades (Hemminki, 1975; Bradley, 1991; Mason, 2008). These studies have largely concentrated on gifts, samples and the frequency of the meetings of physicians with sales representatives (e.g. Wazana, 2000; Watkins et al., 2003; Manchanda and Honka, 2005; Campbell et al., 2007; Naik et al., 2009; Spurling et al., 2010). However, only a few of the previous studies examining the adoption of a new drug by physicians have utilized Rogers's (2003) theoretical framework of innovation diffusion (Ruof et al., 2002; Liu et al., 2011; Zappa and Mariani, 2011; Ruiz-Conde et al., 2014), although the application of this seminal framework in investigating health care innovations has been highly recommended (Berwick, 2003; Greenhalgh et al., 2004).

The adoption of a new drug is a complex and multi-factor process (Denig et al., 1988; Jones et al., 2001; Buusman et al., 2007) that has been studied but mainly in specific disease or medicinal product settings (e.g. Bradley, 1991; Buban et al., 2001; Ruof et al., 2002; Buusman et al., 2007; Mason, 2008; Naik et al., 2009). The factors affecting the introduction of a new drug have been categorized in a number of ways (Hemminki, 1975; Jones et al., 2001; Groves et al., 2002; Prosser et al., 2003; Buusman et al., 2007; Mason, 2008). The review by Groves et al. (2002) indicates that the adoption of a new drug depends on attitudinal changes in individuals. Coleman et al. (1957) demonstrated that interaction with colleagues affected the adoption decisions of physicians. However, although some recent studies have focused on the attitudes of physicians toward innovation (Carter, 2008) and their relationships with patients (Mason, 2008), a physician-pharmaceutical industry relationship has not previously been the focal point of new drug adoption studies.

## **2.7 Research gaps**

The literature on NPL is highly fragmented, focusing on a narrow set of themes and thus a holistic and comprehensive overview on the key determinants of NPL success has not yet been obtained. Despite the apparent importance of adopting a relationship approach in industrial marketing, the literature review revealed a scarcity of studies focusing on the relationship approach in both general and pharmaceutical NPL



contexts. Furthermore, empirical evidence concerning how companies actually employ relationships in the NPL setting remains limited, demonstrating an evident need for further academic study.

More specifically, although a basis for considering the role of strategic orientations in NPL has been established, the vast majority of studies examining the impact of the strategic orientations of companies on NPL success have, to date, focused on the concept of market orientation, underlining the point of view of general customers and competitors but omitting customer relationships. Thus, numerous gaps still exist regarding the role and relative impact of alternative strategic orientations in the NPL context. No previous studies investigating the role and impact of a company's strategic orientations on launch performance in the pharmaceutical industry setting have been published.

Besides the concept of relationship orientation, which has been studied from the seller's perspective, only a few studies have adopted the buyer's perspective on relationship orientation. In particular, earlier studies on the attitudes of physicians toward the pharmaceutical industry have limited their focus mainly to the consideration of sales representatives, gifts, and ethical considerations. The physician-pharmaceutical industry relationship has not been the focal point in previous studies. Hence, a more thorough understanding of this relationship and its antecedents is essential for achieving a mutually meaningful and beneficial relationship between physicians and the pharmaceutical industry.

Although a strong theoretical rationale exists for arguing that the different strategic orientations of companies influences the success of new products through very different mechanisms, the exact mechanisms through which these orientations affect launch performance remain largely unstudied. Furthermore, understanding a company's orientation remains incomplete if it is not known through which activities its organizational culture is transformed into launch success.

Although there is a vital need for successful product launches in the pharmaceutical industry, the mainstream of pharmaceutical marketing literature has mainly focused on product superiority and traditional sales and marketing activities, thus neglecting the relationship approach to some extent. There is a clear need to understand comprehensively the key determinants of NPL success and their impact on

launch performance by using both customer-related and financial performance measures. Furthermore, the diverse determinants of success have not been explicitly linked to the different stages of product lifecycle in the pharmaceutical NPL setting.

The previous studies on the prescribing behaviour of physicians have concentrated mainly on gifts, samples and the frequency of their meetings with sales representatives. However, only a few studies have utilized the seminal theoretical framework of innovation diffusion. Furthermore, the physician-pharmaceutical industry relationship has not previously been the focal point of new drug adoption studies. Therefore, a deeper understanding of the physician-pharmaceutical industry relationship and knowledge about how this relationship is reflected when a physician begins to prescribe a new drug may provide a relevant addition to the existing research on NPL with respect to the pharmaceutical industry.

### 3 Aims of the study

The purpose of this thesis was to obtain a holistic and comprehensive overview on the key determinants of NPL success in the pharmaceutical industry. In order to acquire this overview, the largely neglected relationship approach needs to be taken into account. Thus, this study wants to answer the research question: What is the role and impact of relationship approach in the successful launch of a new product? Specifically, this study examines the role of the key determinants in the pharmaceutical NPL context from the perspectives of both buyers and sellers, and studies their impact on launch performance, including both customer acceptance and financial performance measures.

More specifically, the aims of the present study were to

1. Examine the role and relative impact of three alternative company's strategic orientations, namely market orientation, product orientation and relationship orientation, on launch performance (**I-III**)
2. Study the attitudes of physicians toward the pharmaceutical industry that reflect their relationship orientation to it, and to identify the antecedents of that relationship orientation (**IV**)
3. Examine the alternative mediating mechanisms, namely product advantage and market-based assets, and the key activities, namely sales force management and relationship marketing activities, by which a company's strategic orientations affect launch performance in the NPL context (**I-II**)
4. Identify and rank the most important individual determinants of NPL success that affect both customer acceptance and financial success measures at the different stages of the innovation adoption curve (**III**)
5. Study the physician-pharmaceutical industry relationship and interaction in order to build a mutually meaningful and beneficial collaboration between physicians and pharmaceutical companies, and to investigate how this relationship is reflected in introduction of a new product (**IV**)

A summary of the research gaps, the research questions and the study aims is presented in Table 2.

**Table 2.** *Research gaps, research questions and study aims*

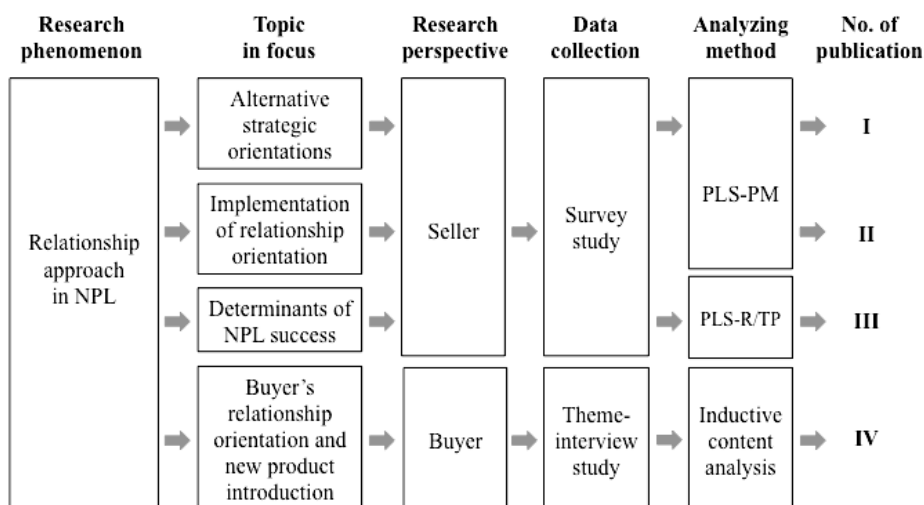
No.	Research gap	Research question	Study aim
	<i>The fragmented NPL literature and the limited number of studies focusing on the relationship approach omitting links to launch performance</i>	<i>What is the role and impact of the relationship approach in the successful launch of a new product?</i>	<i>To provide a holistic and comprehensive overview on the key determinants of NPL success, especially focusing on the relationship approach</i>
1	The role and relative impact of the alternative company's strategic orientations on launch performance	What is the role and relative impact of the alternative strategic orientations of a company on launch performance?	To examine the role and relative impact of three alternative company's strategic orientations – market orientation, product orientation and relationship orientation – on launch performance ( <b>I-III</b> )
2	The buyer's perspective on the relationship orientation with the physician-pharmaceutical industry relationship as the focal point	How are the attitudes of physicians toward the pharmaceutical industry reflected in their relationship orientation and what are the key antecedents of their relationship orientation?	To study the attitudes of physicians toward the pharmaceutical industry and to identify the antecedents of their relationship orientation ( <b>IV</b> )
3	The theoretical mechanisms by which the companies' strategic orientations affect launch performance	How are a company's abstract strategic orientations transformed into launch performance?	To examine the alternative mediating mechanisms – product advantage and market-based assets – and the key activities – sales force management and relationship marketing activities – by which a company's strategic orientations affect launch performance in the NPL context ( <b>I-II</b> )
4	Comprehensive understanding of the key determinants of NPL success, their impact on launch performance, and links to the different stages of product lifecycle in the pharmaceutical NPL setting	What are the key determinants of NPL success, how do they affect launch performance, and how do they link to the innovation adoption curve?	To identify and rank the most important individual determinants of NPL success that affect both customer acceptance and financial success measures at the different stages of the innovation adoption curve ( <b>III</b> )
5	The deeper understanding of the physician-pharmaceutical industry relationship and its impact on the introduction and prescribing of a new drug by physicians	How can a mutually meaningful and beneficial collaboration between a physician and the pharmaceutical industry be built, and how is this relationship reflected when a new drug is introduced?	To study the physician-pharmaceutical industry relationship and interaction in order to build a mutually meaningful and beneficial collaboration between physicians and pharmaceutical companies, and to investigate how this relationship is reflected in introduction of a new drug ( <b>IV</b> )

## 4 Methodology

### 4.1 Design

#### 4.1.1 Methodological triangulation

As this thesis aims to provide a comprehensive overview on the determinants of NPL success, it was considered valuable to combine both quantitative and qualitative research strategies (Figure 3). Further, the inclusion of both the seller's and the buyer's perspectives completes and deepens our understanding of the necessary determinants of successful product launches.



**Figure 3.** Overall design of the study

The quantitative research strategy was used to investigate the determinants of NPL success from a seller's perspective in a survey study. The survey study setting was considered an appropriate research method since retrospective data collection has been the most commonly used research method in the previous NPL studies (Montoya-Weiss and Calantone, 1994; Di Benedetto, 1999; Calantone and Di Benedetto, 2007).

The survey study was targeted to the pharmaceutical companies. The pharmaceutical industry was considered a particularly relevant empirical setting for the study as this industry sector is generally characterized by having high R&D intensity (European Federation of Pharmaceutical Industries and Associations, 2014a) and, in

consequence, a heavy reliance on successful NPL (Achilladelis and Antonakis, 2001). The pharmaceutical industry also has a strong relational business nature (Rod and Saunders, 2009), illustrating the B2B dynamics. Furthermore, the unique characteristics of the pharmaceutical industry (see chapter 1) require industry-specific knowledge expansion as suggested by Stremersch and Van Dyck (2009).

The survey study was executed in Finland. The country selection was based on access to pharmaceutical companies; there are a reasonable number of pharmaceutical companies operating and launching new products in Finland and the novelty of the multidimensional study also guided the selection of one particular country. The cross-sectional study setting allowed the exploration of the role of the wide-ranging determinants of NPL success, and the examination of their impact on launch performance at a certain point in time. Furthermore, this kind of survey study was among the first to investigate sales and marketing operations in the Finnish pharmaceutical industry.

Two different quantitative multivariate data analyzing methods, namely partial least squares (PLS) path modeling (PLS-PM) and PLS regression modeling combined with target projection (PLS-R/TP), were used to analyze data from the survey study. PLS-PM (Wold, 1975) is a component-based structural equation modeling technique, which is a well-established and widely used method in marketing discipline (Hair et al., 2012). It was considered a suitable method for explaining complex relationships. More specifically, the PLS-PM technique was selected in order to examine multidimensional and partly abstract concepts, their causal relationships and the possible mediating mechanisms between the concepts (Vinzi et al., 2010).

Another multivariate data analysis method, PLS-R/TP, uses latent variable regression modeling and combines that with target projection. This method is commonly used in chemometrics (Wold, 1995). It was selected because it extracts relevant information from the measured correlated data (Rajalahti and Kvalheim, 2011). In this study, it was employed in order to explore the individual determinants of success (i.e. the variables) and compare their relative importance.

Qualitative research helps us to understand a social phenomenon in its natural setting (Pope and Mays, 1995). Thus, a qualitative research strategy was used to investigate NPL from the buyer's perspective in a theme-interview study. The theme-

interview study was considered the appropriate research method due to nature of this exploratory study, which focuses on the attitudes, opinions and thoughts of individuals (Britten, 1996; Pope and Mays, 1996). This qualitative research method benefits from being able to describe and interpret social interactions and individual experiences, and from understanding the contexts in which these experiences are situated (O'Brien et al., 2014).

The interview study focused on the physician-pharmaceutical industry relationship. This relationship was considered a relevant and fruitful setting for this study since it illustrates the buyer-seller dyad in the B2B context (Wright and Lundstrom, 2004). Furthermore, physicians prescribe approximately 90% of all medicinal drug products used in Finland, accounting for the largest share of reimbursable medicines sales in Finland (Pharma Industry Finland, 2014b). Thus, physicians are the biggest customer group for the pharmaceutical industry and have a key role in healthcare. Thus, factors reflected in their prescribing behavior might play a significant role within the whole healthcare environment.

In sum, the combination of different research strategies, perspectives and methods of analysis allows methodological triangulation. This mixed-method approach allows for the examination of the phenomenon at several different levels, and may support the providing of a wider overview on the studied topic (Pope and Mays, 1995). Methodological triangulation is also considered valuable when studying a complex and multifaceted phenomenon as it enables a superior interpretation of the data and validation of results (Hurmerinta-Peltomäki and Nummela, 2006; Jack and Raturi, 2006).

#### *4.1.2 Survey study (I-III)*

The initial development of the survey items (i.e. questions) in the questionnaire was based on a comprehensive literature review, including both general business and pharmaceutical NPL literature. Existing scales were employed when applicable. The scale for market orientation was adapted from the cultural aspects of market orientation scale developed by Narver and Slater (1990). The scale for product orientation was adapted from Voss and Voss (2000), reflecting the overall product-centered mindset highlighting the importance of producing superior products, an emphasis on product

innovativeness, and the endeavor of offering the best product in the industry (Montoya-Weiss and Calantone, 1994; Henard and Szymanski, 2001; Szymanski et al., 2007; Jaakkola, 2012). Relationship orientation was measured by utilizing the scale developed by Jayachandran et al. (2005), which emphasizes customer aspects of relationship orientation. Product advantage was studied using the scale developed by Langerak et al. (2004) highlighting diversely characteristics of a new product. The scale for sales force management was adapted from the scale developed in the NPL context by Fraenkel (2011). Both launch performance measures customer acceptance and NPL success, were based on existing scales put forward by Griffin and Page (1993, 1996).

Two new scales were developed for measuring relationship marketing activities and market-based assets in the NPL context. Several steps were taken in order to develop valid and reliable scales for the NPL setting. Both of these new scales were developed based on the comprehensive review of the applicable literature to define the concepts and to specify their domains. The pools of the survey items in the new scales were created based on the insights gained from literature review. Furthermore, to ensure the content validity of the new scales, the selected survey items were discussed with industry experts.

The survey items were assessed on a seven point Likert-type scales ranging from 'strongly disagree' to 'strongly agree'. The financial NPL success measure assessed how the newly launched product achieved its sales, market share and profitability. It was measured on an eleven point Likert-type scale ranging from 'far below target -5' to 'far above target +5' over a one year period and a three year period (Di Benedetto, 1999; Calantone and Di Benedetto, 2007; Droge et al., 2008). Furthermore, the overall measure of success assessed how successful a NPL was generally perceived and was measured on an eleven point Likert-type scale ranging from 'very unsuccessful -5' to 'very successful +5' (Paladino, 2007; Droge et al., 2008).

In addition to the survey items measuring a company's orientations and NPL related activities, the questionnaire included several questions about background information. These questions were related to the characteristics of the respondents and their companies, and the selected newly launched product.

The complete questionnaire was piloted face-to-face with seven senior-level directors with considerable experience in the pharmaceutical industry, representing



different types of pharmaceutical company and respondent categories in the sample. The practitioners were requested to comment on the relevance and clarity of the survey items, and also to openly comment on how the survey items matched their present-day business practices. Finally, four academic experts inspected the final pool of survey items to ensure that the selected items appropriately reflected the underlying concepts. The complete questionnaire is presented in Appendix 1.

#### *4.1.3 Interview study (IV)*

The theme-interview scheme was designed by inviting physicians to describe their attitudes and thoughts on the research topics using open-ended questions. The three themes of the interview study are presented in Table 3. The first theme, relationship orientation toward the pharmaceutical industry, focused on the physicians' personal attitude and relationship with the pharmaceutical industry in general, and described the possible enhancing and inhibiting factors in the development of the relationship orientation of physicians to the pharmaceutical industry. The second theme, interaction with the pharmaceutical industry, concentrated on forms of interaction at the actual moment, their benefits and disadvantages, the positive and negative experiences of the physician-pharmaceutical industry relationship as well as a vision of the relationship at its best. The third theme, new drug introduction, mapped the rationale of physicians when considering whether to prescribe a new drug or not, and the accelerating and delaying factors behind their decisions.

In addition to the interview scheme, the innovation adoption curve was utilized as a tool to help physicians evaluate their habits regarding new drug introduction. The adopter categories presented in the innovation adoption curve (Figure 2) demonstrated that individuals might adopt an innovation differently over time without there being any right or wrong way (Moore, 2002; Rogers, 2003). Physicians were asked to choose which adopter category they belong in and to justify their rationale for their selections.

Furthermore, physicians' background information was collected by using a short questionnaire, including questions about age, sex, specialty, working sector, years of experience, participation in clinical trials, frequency of meeting sales representatives and their opinion about being a KOL in their work unit.

The interview scheme, the usability of the innovation adoption curve, and the background information questionnaire were piloted with three physicians, who fulfilled the sample inclusion criteria (see chapter 4.2.2). Only minor changes were made in the order of questions after piloting.

**Table 3.** *Interview themes*

<i>Relationship orientation toward the pharmaceutical industry</i>
· Personal attitude towards the pharmaceutical industry and their relationship to it
· Enhancing and inhibiting factors of the relationship orientation
<i>Interaction with the pharmaceutical companies</i>
· Forms of interaction at the moment
· Benefits and disadvantages
· Positive and negative experiences
· Collaboration and interaction at its best
<i>New drug introduction</i>
· Rationale behind introducing a new drug
· Expediting and delaying factors

## 4.2 Sampling and data collection

### 4.2.1 Procedures in the survey study (I-III)

The research topics from the seller’s perspective were studied with data collected from the pharmaceutical companies in Finland To obtain a comprehensive sample, a complete list of pharmaceutical companies selling and marketing medicinal drug products with a license to operate in Finland was employed (Finnish Medicines Agency, 2012). Pharmaceutical contract research and manufacturing organizations and wholesalers were excluded.

As a NPL represented the key level of analysis in the survey study, data collection efforts were targeted at new, individual product launches from among the sample companies. The launched products included only novel medicinal drug products with marketing authorization, thus excluding health food products, medicinal devices

and cosmetics. The time frame of five years for launch newness was seen as appropriate based on previous NPL studies (Di Benedetto, 1999; Calantone and Di Benedetto, 2007).

Suitable target respondents for the survey study were the key personnel in charge of the NPL, such as product, sales and marketing managers and directors in the selected companies. The target respondents were identified through a preliminary Internet search, followed by direct contact with the directors of the respective companies. To ensure that the survey was directed at appropriate and knowledgeable respondents, those identified were asked to rate themselves on their familiarity with NPL-related practices, which resulted in a list of 387 knowledgeable sales and marketing contacts with responsibility for NPL in their organizations.

The survey study was executed in 2012. An Internet-based survey was sent by electronic mail to 357 identified respondents after the deletion of 30 respondents with invalid contact information. The respondents were asked to complete the survey in relation to the product launch in which they were most involved over the last five years.

Followed by three reminders sent by electronic mail, the request to participate in the survey yielded 110 responses. After removing one response with problematic missing values, a total of 109 usable responses remained, representing a 30.5% response rate. The characteristics of the respondents are presented in Appendix 2.

#### *4.2.2 Procedures in the interview study (IV)*

Randomized sampling from the member register of the Finnish Medical Association was used to obtain a representative sample of 100 physicians in the geographical area of metropolitan Helsinki in Finland. Medical students, dentists, and veterinarians were excluded. The physicians were approached by telephone or via email, and the study aims and methods were explained. Physicians prescribing drugs on a daily basis were included in the study, which excluded retired physicians or physicians working in administrative, research or educational positions. Twenty-two physicians accepted the invitation to participate in the study (including the participants involved in the piloting). Further participants would have been considered, if the saturation point had not been achieved.

Interviews were conducted face to face in peaceful locations between April and June in 2014 by two trained researchers. The participants were asked to give their written consent to participation and to complete the background information form before the interview. The characteristics of the participants are presented in Appendix 3, representing well the overall population of physicians in Finland.

The participants were encouraged to ponder the topics in-depth and describe their thoughts and experiences openly. The interview length varied from 30 to 45 minutes and they were audiotaped with permission ( $n=20$ ) to allow for the assessment of the interviewers' reliability and to be transcribed verbatim (143 pages in total). Notes were taken for the two non-audiotaped interviews and they were made during and immediately after these interviews. Further interviews were considered unnecessary as the physicians' narratives were being repeated, indicating the achievement of the saturation point.

## **4.3 Analyses**

### *4.3.1 PLS path modeling (I-II)*

The survey study focused on the determinants of success, some of them representing an abstract and unobservable phenomenon (i.e. a company's strategic orientation), while others were more concrete and directly observable (i.e. launch activity). Therefore, it is necessary to approach the measurement of the determinants through constructs with multiple indicators (i.e. survey items). The multi-item measures increase reliability compared to single-item measures as they decrease measurement error as the number of items in the scales increases (Henard and Szymanski, 2001; Szymanski et al., 2007). As the direction of the causality is from the construct to the indicators, and because change in the construct causes changes in the indicators, the classic measures are called reflective (Bollen and Lennox, 1991). Thus, the survey items should be internally consistent as they all reflect the same underlying construct, and are interchangeable meaning that construct validity does not change when a single indicator is removed (Bollen and Lennox, 1991).

The selection of the constructs in studies **I** and **II** were based on the research questions about examining the role and impact of the strategic orientation(s) of the

companies on launch performance, and their possible mediating mechanisms. The selected constructs and measurement items (i.e. indicators) are presented in Appendix 2 and Appendix B in the original publications **I** and **II**, respectively.

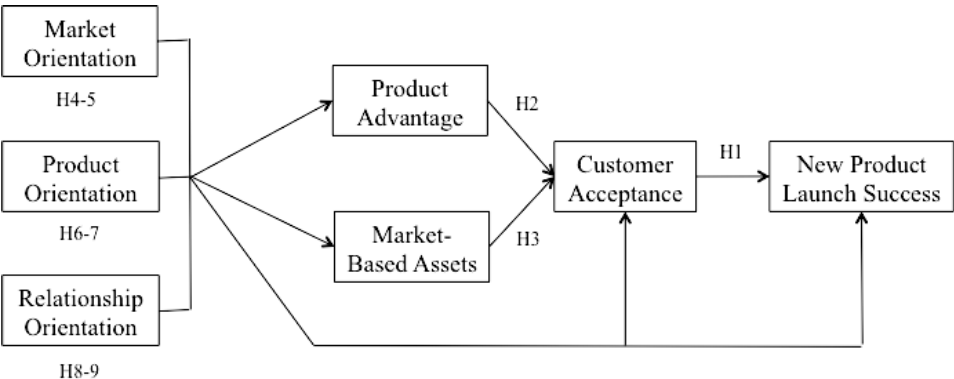
Hypotheses were used to explain the hypothesized relationships between the selected constructs. All of the hypotheses are summarized in Table 4. The detailed reasoning that is related to the theoretical foundations of each hypothesis can be found in the publications.

**Table 4.** *Hypotheses in study I and II*

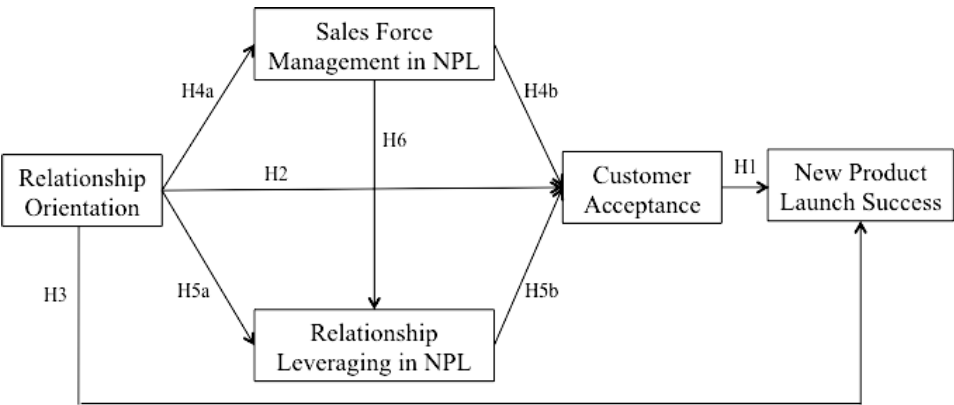
Study	Hypothesis
I	H1 Customer acceptance positively relates to NPL success
	H2 Product advantage positively relates to customer acceptance
	H3 Market-based assets positively relates to customer acceptance
	H4a Market orientation positively relates to customer acceptance
	H4b The link between market orientation and customer acceptance is mediated through product advantage
	H4c The link between market orientation and customer acceptance is mediated through market-based assets
	H5 Market orientation positively relates to NPL success
	H6a Product orientation positively relates to customer acceptance
	H6b The link between product orientation and customer acceptance is mediated through product advantage
	H6c The link between product orientation and customer acceptance is mediated through market-based assets
	H7 Product orientation positively relates to NPL success
	H8a Relationship orientation positively relates to customer acceptance
	H8b The link between relationship orientation and customer acceptance is mediated through product advantage
	H8c The link between relationship orientation and customer acceptance is mediated through market-based assets
	H9 Relationship orientation positively relates to NPL success
II	H1 Customer acceptance is positively related to NPL success
	H2 Relationship orientation is positively related to customer acceptance
	H3 Relationship orientation is positively related to NPL success
	H4 Sales force management in a NPL mediates the link between relationship orientation and customer acceptance
	H4a Relationship orientation is positively related to sales force management in a NPL
	H4b Sales force management in a NPL is positively related to customer acceptance
	H5 Relationship leveraging in a NPL mediates the link between relationship orientation and customer acceptance
	H5a Relationship orientation is positively related to relationship leveraging in a NPL
	H5b Relationship leveraging in a NPL is positively related to customer acceptance
	H6 Sales force management in a NPL is positively related to relationship leveraging in a NPL

Two conceptual models were used to illustrate the selected constructs and their hypothesized relationships. More specifically, the conceptual model was used to test the proposed hypotheses. The conceptual model used in study **I** examines the role and impact of the three companies' strategic orientations on launch performance, while two mechanisms, namely product advantage and market-based assets, explain how a company's orientations can concretely influence launch performance (Figure 4). The

conceptual model used in study **II** examines the impact of relationship orientation on launch performance, and includes sales force management and relationship leveraging activities as two potential key mediators for explaining how the relationship orientation of a company can affect launch performance (Figure 5).



**Figure 4.** *Conceptual model of the study I*



**Figure 5.** *Conceptual model of the study II*

The conceptual models and hypotheses were tested by employing PLS-PM by means of the SmartPLS 2.0 software application (Ringle et al., 2005). PLS-PM was employed as it can achieve high levels of statistical power, even if the sample size is

relatively small at approximately 100 observations and if the measurement model quality is good (i.e. loadings  $>.70$ ; Reinartz et al., 2009). Furthermore, PLS-PM is well suited to the aims of this study as the main focus lies in explaining the variance of the endogenous constructs (Hair et al., 2012). PLS-PM can also model latent constructs under conditions of non-normality, which was the case in this research (Chin et al., 2003). The minimum sample size in PLS-PM should be ten times the highest number of formative indicators in one construct or the largest number of paths connecting the exogenous variables to one endogenous variable, and this study meets that condition (Hair et al., 2012). A bootstrapping procedure was employed to test the significance of the PLS parameter estimates, based on a sample size of 5,000 as recommended by Hair et al. (2012).

As the hypothesized mediating effects represent a central aspect of the conceptual models, the mediating effects are tested according to the process developed by Baron and Kenny (1986). The examination of the mediators' hypothesized outcomes is limited to customer acceptance representing customer-based performance, so as to be able to explore the mediating effect in detail. In order to establish mediation, the following conditions must be met. Firstly, the independent variable (i.e. construct) must significantly account for the variations in the presumed mediator; second, the mediator must affect the dependent variable (i.e. success measure); and third, the independent variable must be shown to affect the dependent variable. If all of these conditions hold in the predicted direction, mediation occurs when the effect of the independent variable (c) on the dependent variable (c') is reduced when the mediator variable is added to the model.

#### *4.3.2 PLS regression modeling combined with target projection (III)*

The whole data set collected in the survey study was subjected to PLS-R/TP analysis using latent variable methods to reveal the most informative variables (i.e. success determinants). The analysis was performed using Sirius version 9.0 software (Pattern Recognition Systems AS, Bergen, Norway). The variables were partitioned into predictor (input) and response (output) variables as presented in Appendix 4.

Principal component analysis (PCA) was first performed to obtain an overview of the data and to reveal possible clustering, trends and outliers among the variables and

respondents (Jackson, 1991). PCA confirmed that the data had no outliers and revealed that the overall success measure provided a good description of both one year and three year financial success measures, and thus it could be used to summarize the financial response measures.

PLS regression models were then calculated for each response variable separately (Wold et al., 1984). In order to improve the interpretation of the PLS models, a target projection (TP) was performed (Kvalheim and Karstang, 1989; Rajalahti and Kvalheim, 2011). In this projection, the predictor variables matrix is projected onto the PLS regression vector. The information in the predictor data that is unrelated (i.e. orthogonal) to the response variable is thus removed and a single latent variable (i.e. a target-projected component) is obtained. The TP component represents the predictive information in the predictor variables for the investigated response variable.

The calculation of selectivity ratios (SR) was used to reveal the most informative predictor variables for each investigated response variable (Rajalahti et al., 2009a and 2009b). The SR is defined as the ratio between explained variance and residual (unexplained) variance in the target-projected component, and is calculated for each predictor variable. This ratio represents a direct quantitative measure of the importance of a predictor variable to explain and predict the response variable. Furthermore, by multiplying the SR with the sign of the corresponding loading on the target-projected component, the SR value reveals which response variables increase and which decrease with the rising values of the predictor variables. The size of the SR ranks the most important predictor variables contributing to the different response variables (Kvalheim et al., 2014). In other words, SR operates as a sensitive multivariate index to rank predictor variables according to their importance in the latent variable model. The predictor variables with a high (positive or negative) SR value are best at explaining the behavior of the investigated response variables.

In this study, the SR values were calculated for each predictor variable in each separate TP model (i.e. for all response variables separately). The response variables that increase with the increasing predictor variable provide positive SR while those decreasing with the increasing predictor variable provide negative SR. Furthermore, confidence intervals were calculated for each SR value based on the iterative cross-validation procedure explained earlier.



#### 4.3.3 *Content analysis (IV)*

The content of the interviews were analyzed inductively (Pope et al., 2000; Elo and Kyngäs, 2008; Pope and Mays, 2009). Inductive content analysis aims to achieve a condensed description of the studied phenomenon from textual data based on providing categories, which describe the previously unstudied or partially understood phenomenon (Elo and Kyngäs, 2008). In other words, the research direction flows from data toward generalizations in comparison to the deductive content analysis, which aims to test the previous theory or model in a different context (Pope and Mays, 1995; Elo and Kyngäs, 2008). Furthermore, an outcome of the systematic inductive content analysis aims to provide typology and find associations between the studied themes in order to interpret the findings (Pope et al., 2000).

Two researchers read through the entire data a number of times to obtain an overall impression of each interviewee's narrative. The open coding of the data was then done manually to describe all aspects and variation in the data as comprehensively as possible in relation to the selected research question: how can a mutually meaningful and beneficial relationship and interaction between physician and pharmaceutical industry be built, and how is this relationship reflected in new drug introduction. The separate lists of identified items compiled by both researchers were compared and grouped under higher order categories to decrease the number of items, following a discussion of similarities and dissimilarities.

Based on the first phase of coding, three exclusive main categories and their subcategories were identified and used as a basis for further coding: 1) the relationship orientation of physicians, including positive, neutral, and negative attitudes toward the pharmaceutical industry; 2) the interaction of physicians with pharmaceutical companies, including the intensity of interaction (activity/passivity); 3) new drug introduction by physicians, including immediate, early, and late adoption patterns. Two researchers then coded the data as a whole by working in parallel and individually and by using the qualitative data analysis software (ATLAS.ti, Scientific Software Development GmbH, Berlin, Germany). The consistency of the coding between the researchers was compared, discussed and revised until mutual agreement was achieved.

## 4.4 Reliability and validity

### 4.4.1 Quantitative analyses (I-III)

Reliable and valid scales and measures provide the basis for trustworthy research. Several steps were taken to ensure the reliability and validity of the multi-item scales (**I-II**) and the multivariate data analyzing methods (**I-III**). The initial validity assessment for the constructs (**I-II**) was conducted with exploratory factor analysis by employing PCA. After the elimination of a few problematic indicators (i.e. survey items), the PCA supported the validity of the constructs as all the survey items loaded highly (i.e.,  $>0.40$ ) on the theoretical factor, and no problematic cross-loadings greater than 0.40 on the other factors were found to exist (Hinkin, 1995). The elimination of indicators is acceptable for reflective constructs due to their interchangeable nature (Bollen and Lennox, 1991). Regarding the PLS-R/TP analysis (**III**), the PCA confirmed that the data had no outliers.

The further reliability and validity assessments (**I** and **II**) included Cronbach's alpha and composite reliability for assessing the reliability of the internal consistency (i.e. how well the indicators measure the same topic). The construct reliability was supported as all constructs exceeded the recommended threshold ( $>0.50$ ), except the construct of market orientation in article **I**, which was 0.49. Convergent validity (i.e. how the measures are related) was assessed by using average variance extracted (Hair et al., 2012), and this was supported as all the constructs exceeded the recommended threshold. Discriminant validity (i.e. how measures are unrelated) was evaluated using the Fornell-Larcker (1981) criterion and indicator cross-loadings. These requirements were met, as the square roots of average variance extracted for all constructs were greater than for the corresponding correlations with any other construct. Also the indicator cross-loadings for each construct showed that each indicator loads highest on the construct it is intended to measure, indicating further support for discriminant validity (Hair et al., 2012). The detailed scale properties can be seen in Table I and Table 1 in the original publications of **I** and **II**, respectively.

Furthermore, the requirements for indicator reliability were met since all indicator loadings were statistically significant (i.e.,  $p < 0.001$ ), and mostly exceeded the recommended threshold of 0.70 (Hair et al., 2012). However, the four loadings (**I**)

below the 0.70 level exceed the acceptable minimum level of 0.55 (Falk and Miller, 1992). The individual indicator loadings are presented in Appendix 2 and Appendix B, and the individual cross-loadings are presented in Appendix 3 and Appendix C in the original publications **I** and **II**, respectively.

Furthermore, the predictive validity (i.e. how well the constructs predict the dependent variables) of the conceptual models (**I-II**) were assessed by examining Stone-Geisser's  $Q^2$  for the individual constructs (Geisser, 1974; Stone, 1974; Hair et al., 2012) and the overall goodness of fit (GoF) value for the complete conceptual model (Tenenhaus et al., 2005). These assessments demonstrated a sufficient level of predictive relevance in the NPL context (Hair et al., 2012). The detailed values for predictive validity assessment can be seen in the original publications **I** and **II**. In addition to having satisfactory validity and reliability statistics, the novel scales of relationship marketing activities and market-based assets demonstrated high predictive validity as they explained launch performance reasonably strongly, giving further support to the goodness of fit of these new measures (see Table II and Figure 2 in the original publications **I** and **II**, respectively).

In the case of PLS-R/TP analysis (**III**), the repeated double cross-validation was used to estimate the number of PLS components in order to obtain the PLS models with the best predictive performance (Bro et al., 2008). In this procedure, one subset (here one-seventh part of the observations) at a time was randomly removed from the training set. A PLS model was calculated using the remaining data and subsequently employed to predict the removed subset. By repeating this procedure several (here 100) times, all observations were utilized both for training and external validation and the measurement of a model's predictive performance was obtained. Furthermore, the explained variances for the PLS models showed the presence of a response related factor in the predictor variables. The percentage explained the variances for the PLS and the TP models that were used as one measure of the overall predictive performance of the model and are presented in details in Table 3 in the original publication **III**.

As the survey study design might result in some biases, possible non-respondent bias was assessed employing a *t*-test of the difference in means on the constructs (Armstrong and Overton, 1977). The *t*-test comparison between early and late

respondents revealed no significant differences in means between these respondent groups at the  $p \leq 0.05$  level, indicating the absence of systematic non-response bias.

Common method bias needs to be taken into account when both independent and dependent variables are obtained from the same source. This is the case in this study as it is based on cross-sectional single respondent design due to the evident challenges in obtaining wide-ranging access to companies. Several procedural remedies were employed consistently with recommendations made by Podsakoff et al. (2003) including full anonymity concerning responses and the employing of various types of scale format and anchor. Furthermore, common method bias was assessed by Harman's one factor test, which is the most widely employed technique to address common method variance (Podsakoff et al., 2003). The un-rotated factor analysis indicated that common method bias is unlikely to be a serious concern in this study (see the original publications **I** and **II**).

As the data was collected retrospectively some halo effect bias may exist, since the success or failure of each product launch was known prior to answering the survey. A subjective evaluation might result in an overoptimistic assessment of launch success if respondents are unwilling to admit the failure of a new product (Henard and Szymanski, 2001; Szymanski et al., 2007). In order to minimize this limitation, the respondents were carefully selected to represent those who are the most familiar with and involved in the launch of a new drug. The objective verification of financial NPL success in comparison to actual sales data could be valuable but it was not possible in this study due to the strict confidentiality restrictions of the pharmaceutical companies.

In conclusion, the results from the reliability and validity assessments, and the evaluations of the possible biases indicate that the multi-item scales and the overall survey study design had satisfactory reliability and validity.

#### *4.4.2 Qualitative analyses (IV)*

The reliability and validity of the interview study was taken into account in the design phase of the study in collaboration with a methodological expert in qualitative research. Reliability and validity were assessed several ways during the data collection and analyzing phases. The reliability was confirmed by involving two trained

researchers in the interviews, allowing one to interview and one to observe. The audiotaping and transcription of the interviews allowed the researchers' reliability to be assessed.

Two researchers also conducted the content analysis parallel and individually. The consistency of the coding between the researchers was compared, discussed, and revised until mutual agreement was achieved, thus increasing the reliability of the analysis. Finally, the preliminary conclusions of the results were sent to the participants for review. This additional validation step did not yield any criticism of the researchers' interpretation of the results.

Furthermore, the randomized sampling across the setting (i.e. the public and private health care units) and across the disciplines (i.e. physicians with various backgrounds) increases the validity of the interview study. The characteristics of the participants indicated a good fit with the statistics of the Finnish physicians (Finnish Medical Association, 2015). Furthermore, representative, authentic and anonymous citations were used to increase the trustworthiness of the study and to exemplify the original data from which the categories were formed (Elo and Kyngäs, 2008).

## **4.5 Ethical considerations**

The ethical considerations of the interview study (IV) were taken into account by requesting an ethical review statement from the University of Helsinki Ethical Review Board in the humanities, social and behavioral sciences before the study began. The review board stated that the study is ethically acceptable (Statement 14/2014).

## 5 Results and discussion

### 5.1 Role and relative impact of a company's strategic orientations (I-III)

#### 5.1.1 Relationship orientation as a complementary strategic orientation (I-III)

The first aim of this study was to examine the role and relative impact of three alternative strategic orientations – market orientation, product orientation and relationship orientation – on launch performance. The results of the direct effects from PLS-PM (I and II) for each studied orientation (as constructs) are presented in Table 5, summarizing the standardized path coefficients, their t-values, statistical significances and explained variance  $R^2$ .

**Table 5.** *PLS path modeling results of the direct effects on the orientations*

Study	Hypothesis	Relationship	Path coefficient	T-value	Statistical significance	$R^2$	Support for hypothesis
I	H1	CA - NPLS	0.233	2.290	$p < 0.05$	0.259	Yes
	H4a	MO - CA	0.244	2.368	$p < 0.05$	0.273	Yes
	H5	MO - NPLS	0.178	1.751	$p < 0.1$	0.259	Yes (weak)
	H6a	PO - CA	0.170	1.780	$p < 0.1$	0.273	Yes (weak)
	H7	PO - NPLS	-0.098	1.084	n.s.	0.259	No
	H8a	RO - CA	0.296	2.963	$p < 0.01$	0.273	Yes
	H9	RO - NPLS	0.265	2.870	$p < 0.01$	0.259	Yes
II	H1	CA - NPLS	0.265	2.871	$p < 0.01$	0.235	Yes
	H2	RO - CA	0.413	4.734	$p < 0.001$	0.171	Yes
	H3	RO - NPLS	0.311	3.334	$p < 0.001$	0.235	Yes

n.s. = not significant

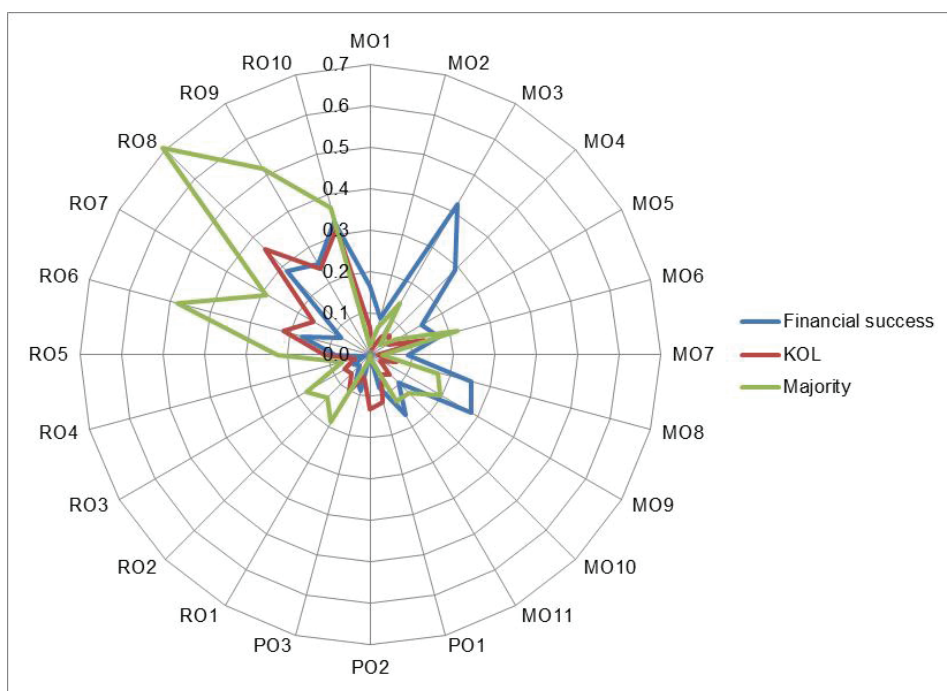
The results demonstrate a strong positive link between relationship orientation and both studied areas of launch performance. This finding broadens the established positive link between a company's relationship orientation and general business performance (Yau et al., 2000; Sin et al., 2002; Sin et al., 2005a; Winklhofer et al., 2006; Stewart et al., 2012; Salojärvi et al., 2015) to launch performance, including both

customer acceptance and financial launch performance measures. Both of these studied measures were positively related, demonstrating that customer acceptance is a central predictor of the financial performance of a NPL. Importantly, the identified relationship orientation – performance link is the strongest one of the three studied orientations (cf. Yau et al., 2000). The finding provides evidence of the significant role of relationship orientation in launch performance in comparison to a company's other strategic orientations.

Simultaneously, the results of the PLS-R/TP analysis for each individual orientation-related variable are summarized in Figure 6. All selectivity ratios with their confidence intervals are presented in Appendix 5. The most significant SR values are linked to the relationship orientation-related variables especially in terms of the acceptance of the majority of customers. The variables with the highest SR values include a company's willingness to invest in building customer relationships, the treatment of customers with both empathy and reciprocity, as well as trust between a company and its customers.

The similar results provided by both methods of analysis strengthen the finding that the relationship orientation is a key success factor in the launching of a new product. Theoretically, the effect of relationship orientation on customer acceptance can be explained due to lowered innovation diffusion barriers (Talke and Hultink, 2010b), resulting from, for instance, higher customer participation and efforts to establish stronger relationships with customers (Fang, 2008).

The strong impact of relationship orientation on launch performance makes a substantial addition to existing mainstream NPL studies, which have mainly applied a product-centered or marketing mix perspective when considering effective strategic and tactical launch activities (e.g. Calantone and Di Benedetto, 2007; Evanschitzky et al., 2012). Furthermore, the finding extends current knowledge concerning the role of a company's strategic orientations when launching new products (e.g. Langerak, 2003; Langerak et al., 2004; Talke and Hultink, 2010a). The existing research is largely limited to investigating the role of a company's general customer and competitor focus through the concept of market orientation for new product performance (e.g. Langerak, 2003; Langerak et al., 2004; Talke and Hultink, 2010a; Mu and Di Benedetto, 2011), whereas this research provides a relational explanation for launch performance.



**Figure 6.** *Selectivity ratios for orientation-related variables (abbreviations of the variables are explained in Appendix 4)*

The finding is also aligned with the pioneering commercialization studies that highlight the importance of networks in innovation diffusion in the B2B context (e.g. Makkonen and Johnston, 2014) and in the commercialization of radical innovations (Story et al., 2011; Aarikka-Stenroos et al., 2014; Aarikka-Stenroos and Lehtimäki, 2014; Sandberg and Aarikka-Stenroos, 2014;). Furthermore, this finding supports the broader business marketing studies that have stressed an ongoing transition toward a more relational approach in business, as opposed to acting solely as suppliers according to the traditional sales-oriented approach presented in the general marketing and sales literature (e.g. Möller and Halinen, 2000). While relational approaches are considered important in the management of existing long-term B2B clientele, it is a novel and much less intuitively self-evident finding that it is also a key determinant in the successful implementation of NPL.



In summary, the finding emphasizes that the development of long-term relationships with a company's customers and other key stakeholders is a key success factor in the launching of a new product. Therefore, relationship orientation is not only important in the management of existing long-term B2B exchange but also represents an additional central predictor of launch performance. In addition to sensing markets, gathering customer and competitor knowledge and responding to market information, companies benefit from paying explicit attention to relationships when launching new products.

#### *5.1.2 Product orientation and market orientation (I, III)*

The PLS-PM results demonstrate that market orientation has a positive direct effect on customer acceptance but offers only weak support for financial performance regarding NPL (Table 5). These results align with the extant broad research evidence (e.g. Langerak et al., 2004; Kirca et al., 2005; Paladino, 2007). In contrast, the SR values show that a few of the market orientation-related variables had more impact on the financial success measure than on the customer acceptance measures (Figure 6). However, the magnitude of the SR values in the market orientation-related variables is much lower compared to the relationship orientation-related variables.

This finding indicates that the broadly studied concept of market orientation, emphasizing a company's focus on customer's satisfaction and competitors (Kirca et al., 2005; van Raaij and Stoelhorst, 2008), is not sufficient in explaining the role of a customer's acceptance regarding NPL success. In addition, some researchers have argued that an overemphasis on customer needs might decrease a company's innovative competence and therefore lead to only marginally new products (Langerak, 2003; Langerak et al., 2004; Zhou et al., 2005).

In turn, a company's product orientation positively affects customer acceptance but not financial performance (Table 5). This positive link matches earlier findings from consumer settings (Voss and Voss, 2000) and the NPL context (Mu and Di Benedetto, 2011). However, the impact of product orientation on launch performance was lower compared to the other orientations that were examined. Similarly, the product orientation-related variables demonstrated the lowest SR values of all the performance measures (Figure 6).

Interestingly, the statistically not significant link between product orientation and launch performance supports the findings of a meta-analysis concluding that the innovation-performance relationship is context dependent (Rosenbusch et al., 2011). Although the pharmaceutical industry sector selected for this study focuses heavily on R&D, a product-oriented company's mindset is seemingly inadequate on its own for achieving launch performance because the empirical findings emphasize the role and importance of complementary strategic orientations (cf. Mu and Di Benedetto, 2011).

## **5.2 Relationship orientation of buyers and its antecedents (IV)**

The second aim of this thesis was to study the attitudes of physicians toward the pharmaceutical industry as reflected in their relationship orientation, and to identify the antecedents affecting the development of their relationship orientation. The concept of relationship orientation was studied on the basis of how physicians described their opinions and thoughts about their relationship with the industry in general. These attitudes reflected the physicians' relationship orientation, which was then categorized as a positive, neutral, and negative relationship orientation. The detailed descriptions and the illustrating quotations of each category are presented in Appendix 6.

The closer examination of the concept of relationship orientation from a physician's perspective contributes to both the existing medical and business literature. Firstly, it deepens the current understanding of physicians' attitudes toward the pharmaceutical industry as an antecedent of the physician-pharmaceutical industry relationship. As the relationship orientation refers to a desire to engage in a relationship (Palmatier et al., 2008), it helps to describe the physicians' overall attitude toward the pharmaceutical industry instead of focusing on single factors such as sales representatives, gifts and samples (e.g. Manchanda and Honka, 2005). The identified three categories of relationship orientation align with the findings Doran et al. (2006) made when researching specialists.

Secondly, the concept of relationship orientation allows the findings to be linked to business literature, as Palmatier et al. (2008) have demonstrated that a buyer's relationship orientation determines the effectiveness of relationship marketing. The physicians described both enhancing and inhibiting factors, which affected the

development of their relationship orientation toward the pharmaceutical industry (Table 6). These antecedents are consistent with previous literature (Lagace et al., 1991; Andaleeb and Tallman, 1995; Palmatier et al., 2008), but distinguish a dependence on novel information instead of on product dependence as an antecedent of the relationship orientation (Palmatier et al., 2008) in the medical B2B context.

**Table 6.** *Antecedents of a physician's relationship orientation to the pharmaceutical industry*

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*Enhancing factors*

- New drug related information and possibility to learn new things
- Sales representative's decorous behaviour
- Support in organizing continuous medical education

*Inhibiting factors*

- Sales representative's inappropriate behaviour and lack of professionalism
  - Poor quality of information
- 

### **5.3 Implementation of a company's strategic orientations (I, II)**

#### *5.3.1 Comparison of mediating mechanisms among strategic orientations (I)*

The third aim of this study was to investigate the alternative mediating mechanisms by which a company's strategic orientations affect customer acceptance in the NPL context. Firstly, the results for each studied orientation that are related to the two mechanisms, product advantage and market-based assets, from PLS-PM (I) are presented in Table 7, summarizing the standardized path coefficients, their t-values, statistical significances and explained variance  $R^2$ .

The results reveal that all the examined orientations affected positively customer acceptance but through different mechanisms. The impact of market orientation and relationship orientation on customer acceptance is partially mediated through market-based assets, whereas the impact of product orientation is fully mediated through product advantage. These findings broaden the focus of NPL research, which has thus far concentrated on product advantage as the key mediating construct in explaining how

a company's strategic orientations affect launch performance (e.g. Langerak et al., 2004). Furthermore, a broader understanding of the mediating mechanisms helps to perceive as well as implement the strategic orientations instead of remaining as abstract and vague upper-level conceptual mindsets.

**Table 7.** *PLS path modeling results of the mediating effects of the orientations*

Model	Hypothesis	Relationship	Path coefficient	T-value	Statistical significance	Mediation	R <sup>2</sup>	Support for hypothesis
Direct effects	H4a	MO - CA	0.244	2.368	$p<0.05$	(c)	0.273	Yes
	H6a	PO - CA	0.170	1.780	$p<0.1$	(c)	0.273	Yes (weak)
	H8a	RO - CA	0.296	2.963	$p<0.001$	(c)	0.273	Yes
Mediating effects	H2	PA - CA	0.329	3.431	$p<0.001$		0.383	Yes
	H3	MBA - CA	0.268	3.018	$p<0.001$		0.383	Yes
	H4a	MO - CA	0.189	1.850	$p<0.1$	(c') PM	0.383	Yes
	H4b	MO - PA	-0.017	0.193	n.s.		0.266	No
	H4c	MO - MBA	0.239	2.399	$p<0.01$		0.135	Yes
	H6a	PO - CA	-0.011	0.103	n.s.	(c') FM	0.383	Yes (weak)
	H6b	PO - PA	0.489	5.557	$p<0.001$		0.266	Yes
	H6c	PO - MBA	0.060	0.625	n.s.		0.135	No
	H8a	RO - CA	0.204	2.088	$p<0.01$	(c') PM	0.383	Yes
	H8b	RO - PA	0.127	1.495	n.s.		0.266	No
	H8c	RO - MBA	0.177	1.814	$p<0.1$		0.135	Yes

n.s. = not significant; FM = full mediation; PM = partial mediation

The empirical results show that the accumulated market-based assets form an alternative powerful mediator linking a company's strategic orientations and launch performance, which parallels earlier studies focusing on general business performance (e.g. Srivastava et al., 1998; Rust et al., 2004; Kirca et al., 2005; Grewal et al., 2009; Ramaswami et al., 2009; cf. Kleinschmidt et al., 2007). More specifically, both relationship orientation, emphasizing the importance of customer relationships, and market orientation, underlining general customer and competitor focus, improve launch performance by helping companies to accumulate market-based assets such as loyalty, a broad customer base and the generating of brand preferences. Thus, the market-based assets provide a relational perspective on launch performance through established customer relationships, which act as a central means for lowering customer adoption barriers for innovation as was suggested by Talke and Hultink (2010b). This finding also gives support to the idea that undeveloped relational networks can act as a central

diffusion barrier to innovations in B2B contexts (Sandberg and Aarikka-Stenroos, 2014).

Furthermore, the results confirm the role of product advantage as a critical success factor in the NPL context (cf. Henard and Szymanski, 2001). This link builds on the theory of innovation diffusion stating that product advantage enhances customer adoption and the diffusion of innovation (Rogers, 2003). However, product orientation is the only strategic orientation that links to customer acceptance through an increase in product advantage. In contrast to earlier findings, market orientation did not affect the generation of product advantage in a positive way (Langerak et al., 2004). This implies that although the direct link between a company's product orientation and financial NPL success is not statistically significant (Table 5), companies should not underestimate its role in long-term business performance as product orientation helps companies to build product advantage and thus customer acceptance. Furthermore, the positive link between product orientation and product advantage, but not between market orientation and product advantage, implies that a company's internal product focus can be more important for establishing product advantage than a market-oriented focus in highly R&D intensive and innovation-driven industries such as pharmaceuticals. In these settings, the focus on keeping customers and competitors close does not necessarily result in the development highly of innovative products. Rather, a product-oriented culture combined with a relationship approach is needed for long-term success. Hence, the finding broadens the demonstrated synergistic effect of technology and customer relationship orientations in general business performance (Salojärvi et al., 2015), showing the benefits of having a combination of alternative strategic orientations in the NPL context.

### *5.3.2 Implementation of the relationship orientation (II)*

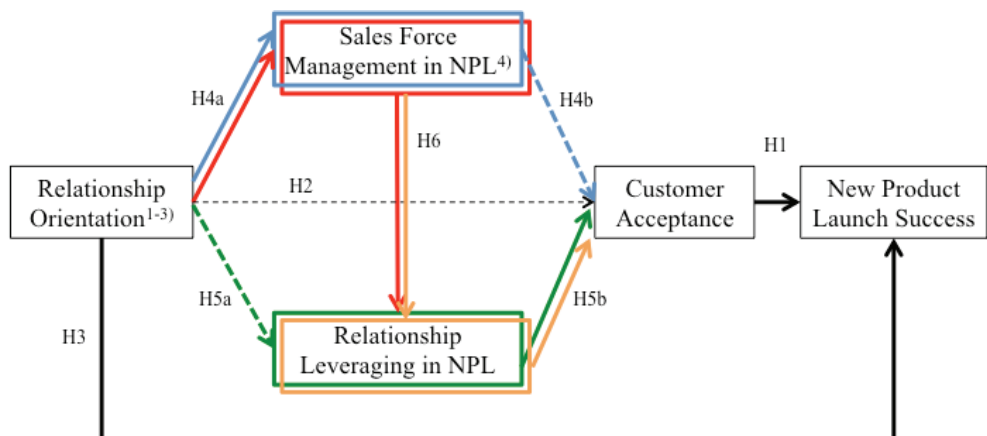
Secondly, the key activities, namely sales force management and relationship marketing activities, through which an abstract relationship-oriented organizational culture transforms into launch performance, were studied. The results of the mediating effects from PLS-PM (II) are presented in Table 8, summarizing the standardized path coefficients, their t-values, statistical significances and explained variance  $R^2$ . The

results illustrate four different mediating effects, indicating that the relationships among the studied constructs were more complex than hypothesized, as the findings showed two additional non-hypothesized mediating effects. All the mediating effects are presented in the complete research model in Figure 7.

**Table 8.** *PLS path modeling results of the mediating effects on relationship orientation*

Model		Hypothesis	Relationship	Path coefficient	T-value	Statistical significance	Mediation	R <sup>2</sup>	Support for hypothesis
Conceptual model	Direct effect	H2	RO - CA	0.413	4.735	$p < 0.001$	(c)	0.171	Yes
	Mediating effects	H4a	RO - SFM	0.557	8.049	$p < 0.001$		0.310	Yes
		H4b	SFM - CA	0.409	3.748	$p < 0.001$		0.285	Yes
		H4	RO - CA	0.185	1.524	n.s.	(c') FM	0.285	Yes
		H5a	RO - RL	0.367	4.127	$p < 0.001$		0.135	Yes
		H5b	RL - CA	0.423	4.535	$p < 0.001$		0.323	Yes
		H5	RO - CA	0.255	2.69	$p < 0.01$	(c') PM	0.323	Yes
Complete research model	Direct effects	H5a	RO - RL	0.367	4.127	$p < 0.001$	(c)	0.135	Yes
		H4b	SFM - CA	0.409	3.748	$p < 0.001$	(c)	0.285	Yes
	Mediating effects	H4a	RO - SFM	0.557	8.049	$p < 0.001$		0.310	Yes
		H6	SFM - RL	0.613	10.804	$p < 0.001$		0.392	Yes
		H5a	RO - RL	0.023	1.763	n.s.	(c') FM	0.392	No
		H6	SFM - RL	0.613	10.804	$p < 0.001$		0.392	Yes
		H5b	RL - CA	0.311	3.588	$p < 0.001$		0.343	Yes
		H4b	SFM - CA	0.222	1.368	n.s.	(c') FM	0.343	No

n.s. = not significant; FM = full mediation; PM = partial mediation



Bold solid arrow = statistically significant,  $p < 0.01$  or  $p < 0.001$ ; Broken arrow = statistically not significant (n.s.)

1) RO-CA relationship is fully mediated through SFM (in blue)

2) RO-CA relationship is partially mediated through RL (in green)

3) RO-RL relationship is fully mediated through SFM (in red)

4) SFM-CA relationship is fully mediated through RL (in orange)

**Figure 7.** *Mediating effects on relationship orientation*

The first and second mediating effects demonstrate that both sales force management and relationship marketing activities play key roles in transforming a company's abstract relationship orientation into customer acceptance. More specifically, the findings show that relationship orientation has a major influence on a company's sales force management practices in NPL, such as controlling and rewarding the sales force; thus supporting notions concerning the relational role of sales in business markets (e.g. Storbacka et al., 2009). Furthermore, a company's relationship orientation is a central driver of the systematic leveraging of customer and stakeholder relationships in NPL. These activities highlight issues such as the identification and involvement of opinion leaders; the efforts to build pre-launch product awareness among key stakeholders by involving potential early adopters; the various market access-focused activities aimed at stakeholders, gatekeepers who can have a major impact on the adoption of new products, and also the systematic building of long-term relationships with key customers and stakeholders (e.g. Mantrala et al., 2008).

The third mediating effect shows that sales force management has a critical role in transforming a company's abstract relationship orientation into concrete relationship marketing activities (Figure 7). Much of the extant new product selling literature has examined issues such as sales force composition, effort and commitment to new products, motivation and training, and considers a sales force a critical contributory factor to launch success (e.g. Cooper, 1998; Di Benedetto, 1999; Hultink and Atuahene-Gima, 2000; Fu et al., 2010). This finding provides a significant addition to the existing knowledge by showing that systematic sales force management is a key antecedent for effective relationship marketing activities when launching new products. Hence, in accordance with organizational culture-related research (Deshpandé et al., 1993; Moorman, 1995; Day, 2000), the desired outcomes, such as customer acceptance of a new product, and the means to achieve those desired outcomes, such as relationship marketing activities, should be confirmed and reinforced by communicating with and rewarding sales management.

The fourth mediating effect demonstrates that relationship marketing activities mediate the effect of sales force management on customer acceptance (Figure 7). This finding emphasizes the utmost importance of relationship marketing activities in the NPL context, aligning it with the modern perspective that salespersons should recognize

their role as relationship builders (e.g. Crosby et al., 1990; Jolson, 1997; Weitz and Bradford, 1999), and more broadly emphasizes the increasingly relational role of selling (cf. Storbacka et al., 2009; Haas et al., 2012).

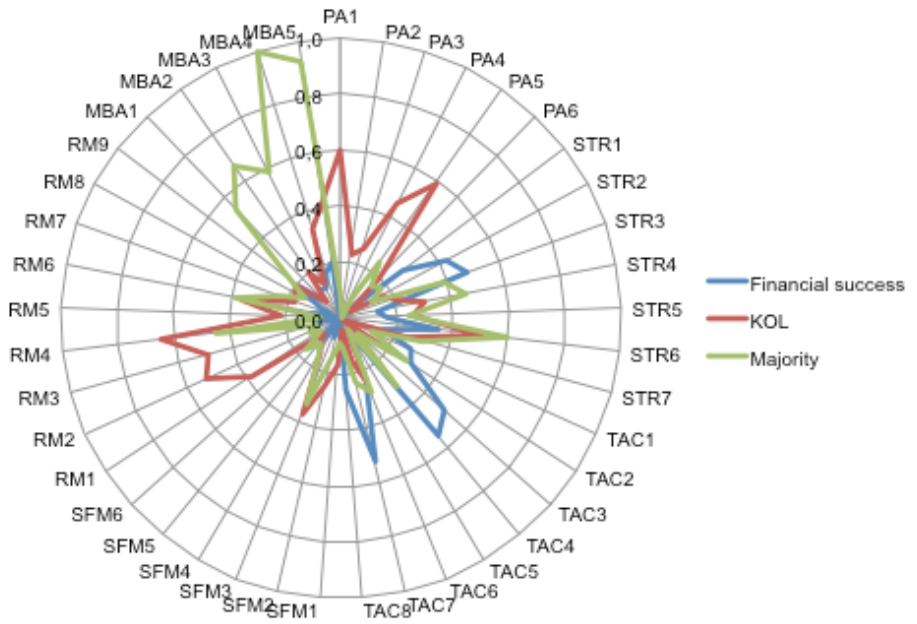
In summary, the mediating effects that were found indicate how a company's abstract relationship-oriented organizational culture is transformed into launch performance. In fact, the results confirm that a company's relationship orientation and the identified mediating mechanisms are the central predictors of performance in the NPL context.

#### **5.4 Diversity of success drivers in NPL (III)**

The previous chapter illustrated the diversity of the theoretically hypothesized mechanisms, which predict a company's launch performance by putting the abstract organizational culture-related orientations of a company into practice. The fourth aim of this study is to investigate the NPL-related success factors. In fact, the aim is to explore comprehensively the determinants of NPL success by identifying and ranking the most important individual success drivers affecting customer acceptance and financial performance measures along the innovation adoption curve.

The results of the PLS-R/TP analysis for each individual variable, including product advantage, strategic choices, tactical decisions, sales force management, relationship marketing activities and market-based assets, are summarized in Figure 8. All selectivity ratios with their confidence intervals are presented in Appendix 5. The results distinguish between the determinants driving financial success and those driving customer acceptance – as related to both KOL and the majority of target customers in the NPL setting. Whereas financial success is driven by strategic choices and tactical decisions, product advantage and relationship marketing activities contribute to achieving key opinion leaders' acceptance, while the accumulated market-based assets largely determine the acceptance of a majority of other target customers.



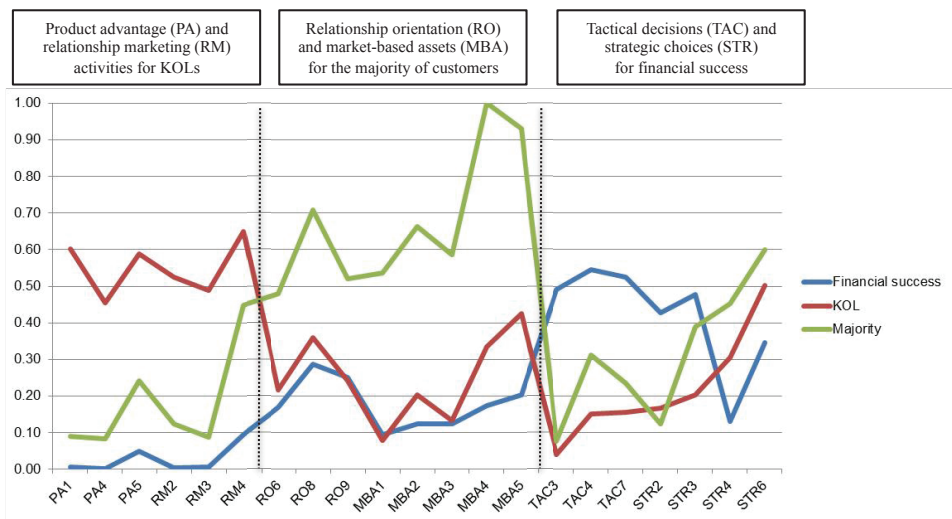


**Figure 8.** *Selectivity ratios for product advantage, sales and marketing decisions and activities related to the variables (abbreviations of the variables are explained in Appendix 4)*

Further analysis utilized the innovation adoption curve and provided deeper knowledge about customer acceptance at the different phases of innovation diffusion in the NPL context. The summary of the highest SR values ( $> .4$ ) reveals that the relationship approach is vital for fostering customer acceptance at different phases of innovation diffusion (Figure 9). A summary of the success drivers and the individual key determinants are also presented in Table 5 in the original publication **III**.

In the early phase, the product advantage and relationship marketing activities are the key determinants of NPL success, demonstrating their importance for achieving the acceptance of KOLs, which shows that they appreciate the benefits and superiority of the product over its competitors, which is logical, since product advantage is one of key factors driving the speed of innovation (Rogers, 2003). The highest SR values also demonstrate that relationship marketing activities, which aim to establish, maintain and leverage customer relationships, are more valuable for KOLs than the traditional

marketing mix and sales activities in the early phase of launch. This finding contributes to the extant literature by demonstrating the significance and effectiveness of relationship marketing in this specific target customer group in the pharmaceutical NPL context (Talke and Hultink, 2010b; Athaide and Zhang, 2011). Thus, the effective engagement of KOLs is an important antecedent for the market penetration of a new drug (Sandberg, 2002; Smith, 2009).



**Figure 9.** Variables with selectivity ratios over 0.4 (abbreviations of the variables are explained in Appendix 4)

In the later phase of innovation diffusion, in addition to the relationship-oriented organizational culture (see chapter 5.1.1), the accumulated market-based assets largely determine a new product's acceptance by the majority of other target customers, representing the mainstream market segment. The rationale behind the differences in the key success determinants of the early and late customer groups lies in the innovation diffusion theory, which puts forward the view that the domains of greatest value to customers change from technology- and product-related aspects to market- and company-related aspects as a new product moves through its lifecycle (Moore, 2002).

Furthermore, as the results show, certain strategic choices, such as comprehensively gathered market intelligence and a clearly defined launch strategy, and

tactical decisions, such as appropriate pricing policy and price level, a well conducted promotion and a proficiently executed marketing plan, drive the financial success of a new pharmaceutical product launch. However, the timing of the product launch seems to be the most important strategic variable for gaining acceptance from both KOLs and the majority of customers. These findings support previous studies that present these determinants as the key elements in NPL success (Hultink et al., 1997; Di Benedetto, 1999; Trim and Pan, 2005; Amsbaugh and Pitta, 2006; Stros et al., 2009; Stros and Lee, 2014).

Interestingly, the role of sales force management activities is less significant than expected – based on the previous literature (Ruzicic and Danner, 2007; Fraenkel, 2011) and compared to the results of the PLS-PM. A similar phenomenon can be seen in relation to the market access strategy and tactical activities, such as advance notification documentation to key decision-makers, health outcome toolkits and implementation tactics. They had a moderately low impact on NPL success in this data set, although the role of market access has been noted as essential for the launch of a new drug (McGrath, 2010).

In summary, the results distinguish between different success factors at different phases of innovation diffusion and emphasize the significance of the relationship approach in the launch of a new product. The key role of the relationship approach can be seen at a company's organizational culture level but also at the level of concrete sales and marketing activities.

## **5.5 New product introduction and physicians (IV)**

The fifth and the last aim of this thesis was to study the physician-pharmaceutical industry relationship in order to build a mutually meaningful and beneficial collaboration, and to investigate how this relationship is reflected when a new drug is introduced. The adoption patterns and rationale of the physicians in new product introduction were studied by utilizing the innovation adoption curve and adopter categories. The identified categories, based on the content analysis and the illustrating quotations, are presented in Appendix 6.

### 5.5.1 Rationale in new product introduction

The results of the content analysis revealed that product advantage and a physician's personal interest were the main accelerating adoption factors in the early adopter categories, whereas evidence- and experience-based reasoning and colleagues' opinions were the most common reasons for a new product introduction in the late adopter categories (Table 9). In other words, the rationale for physicians to introduce a new drug is related to superior product characteristics, a physician's personal interest, and new drug information. Although these aspects have been widely acknowledged (Groves et al., 2002; Buusman et al., 2007; Jaakkola and Renko, 2007; Mason, 2008), none of the previous studies has linked physicians' prescribing rationale with the adopter categories used in the theory of innovation diffusion. This novel information helps the pharmaceutical industry to better understand a new product introduction from the perspective of physicians and to better serve their needs during the different phases of a product's lifecycle.

**Table 9.** *The rationale of physicians when introducing a new drug*

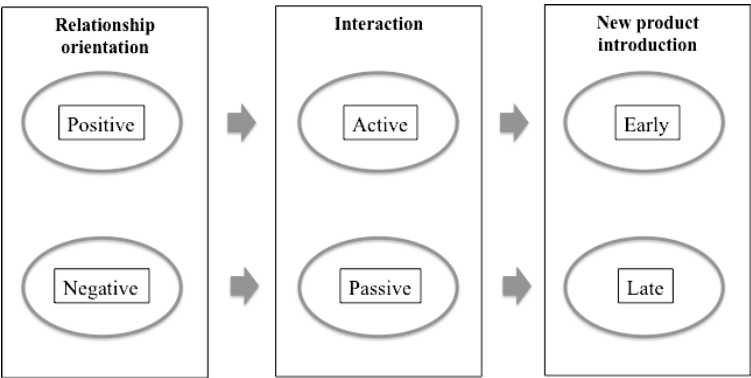
Innovators	Early adopters	Early majority	Late majority	Laggards
<ul style="list-style-type: none"> <li>- Product advantage</li> <li>- Personal interest</li> <li>- Willingness to try immediately</li> </ul>	<ul style="list-style-type: none"> <li>- Product advantage</li> <li>- Personal interest</li> <li>- Willingness to adopt quickly</li> </ul>	<ul style="list-style-type: none"> <li>- Product advantage</li> <li>- Personal interest</li> <li>- Product knowledge</li> <li>- Research evidence</li> <li>- Clinical experiences</li> <li>- Colleagues' opinions</li> </ul>	<ul style="list-style-type: none"> <li>- No product advantage</li> <li>- Personal interest</li> <li>- Product knowledge</li> <li>- Research evidence</li> <li>- Clinical experiences</li> <li>- Colleagues' opinions</li> <li>- Price and related cost benefits</li> </ul>	<ul style="list-style-type: none"> <li>- No immediate product advantage</li> <li>- No personal interest</li> <li>- Colleagues' opinions</li> <li>- Wide clinical usage</li> </ul>

Unexpectedly, 45% of the physicians selected two adopter categories instead of one indicating a dual adoption approach regarding new drugs. These physicians described a different rationale for introducing new products in different situations. In fact, these physicians prescribed a new drug both in the early phase (innovators, early adopters) and in the later phase (late majority, laggards) of the innovation adoption curve (Appendix 6). The identified bipolar rationale behind the introduction of a new

product in different situations seems to occur due to the differences in the properties of a new drug, the personal interests of physicians and their specialties. In fact, for example, those specialists who adopted an innovative new drug that catered to a clearly unmet medical need delayed or even ignored a new generic drug outside their specialty.

### 5.5.2 *Physicians' relationship orientation to the pharmaceutical industry and new product introduction*

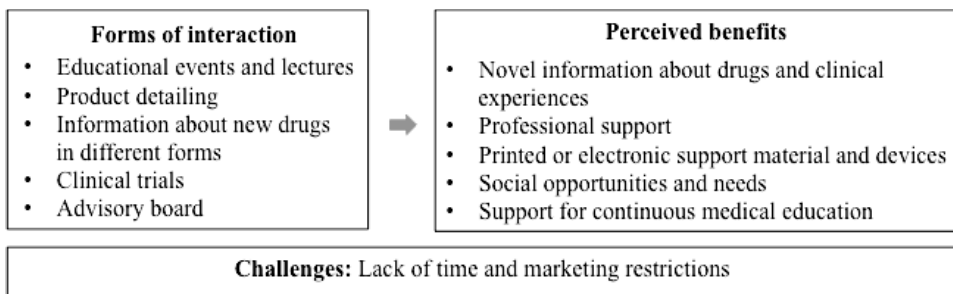
The content analysis revealed how the physicians' relationship orientation was reflected in their new product introduction through interaction with pharmaceutical companies. More specifically, the physicians' positive relationship orientation and active interaction was reflected in the early adoption of a new drug, whereas the negatively oriented and passively interacting physicians adopted a new drug later. These two main pathways linking the physicians' relationship orientation, interaction and new product introduction are illustrated in Figure 10.



**Figure 10.** *Two pathways linking the relationship orientation of physicians to the pharmaceutical industry, their interaction with it and the introduction of new products*

The intensity of the physicians' interaction has previously been observed from mainly ethical perspectives (Brennan et al., 2006; Doran et al., 2006) due to the criticism of physician-pharmaceutical industry relationships. The results emphasize that the physicians' primary needs for interaction are related to professional development and drug information instead of unprofessional personal benefits (Figure 11 and

Appendix 6), which have been used to entangle physicians and pharmaceutical companies (Abbasi and Smith, 2003; Moynihan, 2003b; Brennan et al., 2006). This finding indicates that the physician-pharmaceutical industry relationship has developed from being ethically precarious and having non-professional personal benefits toward becoming a more sustainable collaboration. Furthermore, the physicians' perspectives outline the elements necessary for a mutually meaningful and beneficial physician-pharmaceutical industry relationship and collaboration.



**Figure 11.** *Perceived benefits and challenges for physicians when interacting with pharmaceutical companies*

In comparison to the previous studies, this study extended its analysis from the orientation-interaction linkage to new drug introduction (cf. Doran et al, 2006). The adoption patterns of physicians were analyzed on the basis of their willingness to introduce a new drug. These adoption patterns were categorized into immediate, early and late adopters. The descriptions and the illustrating quotations for each category are presented in Appendix 6.

The interlinkages between the research themes (i.e. a physician's relationship orientation, interaction and new product introduction) in combination with the innovation adoption curve showed that a physician's positive relationship orientation and active interaction was reflected in the early adoption of new drugs. It demonstrated that product advantage and personal interest of physicians as accelerating adoption factors. In comparison, the negatively oriented and passively interacting physicians adopted new drugs later and did so based on evidence- and experience-based reasoning

and the opinions of colleagues. The interlinkages that were identified contribute to medical literature focusing on the prescribing behaviour of physicians since this study bridges their attitudes toward the pharmaceutical industry and their prescribing behaviour instead of investigating them as separate topics (Manchanda and Honka, 2005). This study also makes the physician-pharmaceutical industry relationship the focal point when studying physicians' adoption patterns as previous studies have focused on their relationships with professional colleagues (Coleman et al., 1957) and patients (Mason, 2008). Moreover, the findings contribute to the previous studies, which have limited their focus to the linkage between the attitudes and interaction of physicians with the pharmaceutical industry (Doran et al., 2006), or the linkage between the interaction of physicians and new drug introduction (Buban et al., 2001; De Ferrari et al., 2014).

## **6 Conclusions**

### **6.1 Theoretical implications**

The first contribution concerns the role and relative direct impact of a company's strategic orientations on launch performance. The findings demonstrate that a company's relationship orientation is the strongest predictor of launch performance compared to the other studied strategic orientations. As the vast majority of NPL studies have focused on the market orientation (Langerak, 2003; Kirca et al., 2005; van Raaij and Stoelhorst, 2008), this thesis extends our knowledge on the role of strategic orientation in launch performance (cf. Langerak, 2003; Langerak et al., 2004; Talke and Hultink, 2010a; Mu and Di Benedetto, 2011). More specifically, this study broadens the established positive link between a company's relationship orientation and general business performance (Yau et al., 2000; Sin et al., 2002; Sin et al., 2005a; Stewart et al., 2012; Salojärvi et al., 2015) to launch performance, including customer acceptance and financial launch performance measures. Thus, a company's relationship orientation is deemed a complementary key success determinant in the launch of a new product.

The second contribution relates to the relationship orientation from the buyer's perspective. The results deepen our current understanding of the relationship orientation of physicians toward the pharmaceutical industry. The physicians' relationship orientation was categorized as positive, neutral or negative. Furthermore, the physicians' desire to develop professionally, their dependence on novel information as well as the competence and behaviour of the sales representatives were the key antecedents of the physicians' relationship with the pharmaceutical industry as a whole. In addition, by studying the concept of relationship orientation from a buyer's perspective, links are made to the findings of business literature, which is important as Palmatier et al. (2008) have demonstrated that a buyer's relationship orientation determines the effectiveness of relationship marketing.

The third contribution of this study concerns the alternative theoretical mediating mechanisms for explaining how a company's strategic orientations affect launch performance, especially customer acceptance. The results showed that all the studied orientations affected customer acceptance through different mechanisms. More specifically, the study demonstrated that accumulated market-based assets represent a



powerful relational mediator that works alongside the product advantage to link a company's orientations and launch performance. Therefore, the accumulated market-based assets provide a relational aspect on the study of launch performance by examining it through established customer relationships (cf. Srivastava et al., 1998; Kirca et al., 2005; Grewal et al., 2009). This finding widens the focus of the existing NPL research, which has concentrated on product advantage as a central mediator in explaining how a company's market-oriented organizational culture affects launch performance (Langerak et al., 2004).

Furthermore, this study contributes to the existing NPL studies by providing new detailed insights into key activities in effective implementation of a company's abstract relationship-oriented organizational culture into practice in the NPL context. The results revealed that the relationship orientation is a central driver of systematic sales force management and relationship marketing in the NPL setting. More specifically, sales force management plays a key role in transforming a relationship-oriented culture into relationship marketing activities. Furthermore, relationship marketing activities mediate the performance effects of the relationship orientation and sales force management.

The fourth contribution concerns the individual determinants of NPL success at the different stages of a product's lifecycle in the pharmaceutical industry setting. The findings demonstrate the diversity of the determinants of success. Whereas financial NPL success is driven by strategic choices and tactical decisions, the relationship approach is vital for fostering customer acceptance at different phases of the innovation diffusion. In particular, product advantage and relationship marketing activities play a significant role in achieving the acceptance of KOLs in the early phase of a NPL, while the accumulated market-based assets and relationship-oriented organizational culture largely determine the acceptance of a new product by the majority of other target customers in the later phase. Based on these findings, this study provides a holistic overview of the key determinants of NPL success (Stros and Lee, 2014) and links them to the different stages of the product lifecycle by utilizing the theory of innovation diffusion (Rogers, 2003), thus contributing to the existing pharmaceutical marketing literature.

The fifth contribution relates to the physician-pharmaceutical industry relationship and interaction in order to build a mutually meaningful and beneficial collaboration between physicians and pharmaceutical companies, and how this relationship is reflected in the introduction of a new drug. The findings revealed that a physician's positive relationship orientation and active interaction results in the early adoption of new drugs that have a product advantage. Additionally, if a physician has a personal interest in the adoption of a new drug this will also accelerate its adoption. In comparison, negatively oriented and passively interacting physicians will adopt a new drug later on, and do so based on research evidence- and experience-based reasoning and the opinions of their colleagues. In combination with the theory of innovation diffusion (Rogers, 2003), this study broadened our current understanding of the physician-pharmaceutical relationship (Doran et al., 2006) and demonstrated how the relationship orientation of physicians is reflected in the introduction of a new product in the medical B2B context. Furthermore, the study demonstrated that the relationship between physicians and the pharmaceutical industry has developed from being ethically precarious and having non-professional related personal benefits toward becoming a more sustainable collaboration (cf. Moynihan, 2003; Brennan et al., 2006; Angell, 2009).

In conclusion, this thesis contributes to the existing NPL literature by providing a holistic and comprehensive overview on the key determinants of NPL success and by generating new empirical evidence on the importance of a relationship approach in the pharmaceutical NPL context (Table 10). The overall results are aligned with pioneering studies on the importance of networks in the commercialization of an innovation (e.g. Story et al., 2011; Aarikka-Stenroos et al., 2014; Aarikka-Stenroos and Lehtimäki, 2014; Sandberg and Aarikka-Stenroos, 2014). In particular, the findings from both the seller's and the buyer's perspectives call for a relationship approach that complements the traditional sales and marketing approach in the pharmaceutical NPL setting.

**Table 10.** *A summary of the answers to the research questions*

No.	Research question	Answer
	<i>What is the role and impact of the relationship approach in NPL success?</i>	<i>The relationship approach has a significant impact on launch performance in the pharmaceutical NPL context complementing the traditional sales and marketing approach.</i>
1	What is the role and relative impact of the alternative strategic orientations of a company on launch performance?	A company's relationship orientation has the strongest positive impact on launch performance in comparison to market and product orientations.
2	How are the attitudes of physicians toward the pharmaceutical industry reflected in their relationship orientation and what are the key antecedents of their relationship orientation?	The attitudes of physicians toward the pharmaceutical industry are reflected in their relationship orientation being positive, neutral or negative. The physicians' desire to develop professionally, their dependence on novel information and the competence and behaviour of the sales representatives were the key antecedents of the physicians' relationship to the pharmaceutical industry.
3	How are a company's abstract strategic orientations transformed into launch performance?	Accumulated market-based assets mediate the impact of market and relationship orientations on customer acceptance, whereas the impact of product orientation is mediated through product advantage. Sales force management and relationship marketing activities mediate the relationship orientation's impact on launch performance.
4	What are the key determinants of NPL success, how do they affect launch performance, and how do they link to the innovation adoption curve?	Whereas financial performance is driven by strategic choices and tactical decisions, the relationship approach is vital in fostering customer acceptance at different phases of the innovation diffusion. In particular, product advantage and relationship marketing activities have a significant role in achieving the acceptance of KOLs in the early phase, while the accumulated market-based assets and relationship-oriented organizational culture largely determine acceptance by the majority of the other target customers in later phases.
5	How can a mutually meaningful and beneficial collaboration between a physician and the pharmaceutical industry be built, and how is this relationship reflected when a new drug is introduced?	The physician-pharmaceutical industry relationship has developed from being ethically precarious and having non-professional personal benefits in the direction of a more sustainable collaboration. A physician's positive relationship orientation and active interaction can result in the early adoption of new drugs with product advantage. A physician's personal interest in a new drug will also accelerate the adoption of a new drug. In comparison, negatively oriented and passively interacting physicians will adopt a new drug later and do so based on research evidence- and experience-based reasoning and the opinions of their colleagues.

From the methodological perspective, this study demonstrated the valuable combination of both quantitative and qualitative research strategies and both perspectives of the buyer-seller dyad. In addition, two different quantitative analytical methods improved the methodological triangulation, allowing for the better interpretation and validation of the results. Furthermore, PLS-R/TP employing selectivity ratios proved to be a useful method for identifying and ranking the most important determinants that contribute to launch performance. Actually, this technique is widely used in variable selection and model interpretation in a diversity of biomarker analyses, pharmaceutical product development and manufacturing related applications (e.g. Gabrielsson et al., 2002; Rajalahti et al., 2010; Zomer et al., 2010), but this study broadens the method's usability to sales and marketing analyses. Lastly, the researcher developed the design of the graphics to better illustrate the selectivity ratios.

## **6.2 Managerial implications**

This study calls for a relationship approach to complement the traditional approach to the research of NPLs in order to effectively enhance the launch of new products through relationship-oriented sales and marketing activities. The study provides evidence from the perspectives of both buyers and sellers, demonstrating that the relationship approach is centrally connected to customer acceptance and success in the NPL context. A pharmaceutical product launch should focus on appropriate relationship marketing activities conducted in a timely manner to achieve the acceptance of the target customers. The proper targeting of these activities is of considerable importance since major changes in the healthcare environment, such as pressures for cost savings, difficulties in gaining access to physicians, and tightening regulations on promotion, call for attention to be paid to the effectiveness of the pharmaceutical sales force (Ruzicic and Danner, 2007; Fraenkel, 2011). As the sales force operation has been considered the most expensive pharmaceutical marketing activity (Black, 2005), the relationship approach offers a novel perspective on traditional sales and marketing and provides the required effectiveness (cf. Ruzicic and Danner, 2007; Terblanche, 2008).

### *6.2.1 Building a relationship-oriented organizational culture*

This study provides several important and practical managerial implications for enhancing the launch of new products from the perspective of a company's strategic orientations. As our results indicate, managers who are responsible for NPL should recognize that a company's various orientations play different roles in driving launch performance. As a restrictive mindset within a company has been recognized as an internal diffusion barrier to the commercialization of radical innovations (Sandberg and Aarikka-Stenroos, 2014), strategic orientations, which are tightly related to a company's organizational culture, can thus help to overcome this barrier and enhance launch success.

The results indicate that at least in the highly intensive R&D businesses, such as pharmaceuticals, an in-depth understanding of customer needs and competitors does not necessarily result in the development of highly superior products. Nevertheless, a company's internal focus on innovation and its endeavors to offer superior products to the market is central for product advantage.

In comparison to a company's internal product-centered focus, an external market-oriented and especially a relationship-oriented organizational culture is a driver for NPL success. Since a company's relationship orientation was found to be the most important strategic orientation for success when launching new products, it should be perceived as a complementary approach to the dominant market orientation. The desire to engage in establishing and developing strong and long-term relationships has a powerful impact on success when launching new products. A relationship-oriented company is willing to invest time, effort, finances and resources in building stronger customer relationships and is committed to maintaining valued customer relationships. Furthermore, a relationship-oriented company treats its customers with empathy and reciprocity, and builds trust in its business practices. Therefore, companies should focus on creating an organizational culture that puts customer and key stakeholder relationships at the core of their strategic thinking.

Top-level managerial attention is crucial for forming the relational mindset in the company and transferring it to lower levels of an organization and across its departments. Therefore, the top management of a pharmaceutical company needs to devote sufficient resources to creating relational frontline sales as well as marketing

activities relating to NPL such as customer appointments, KOL involvement and co-operation in professional training. That should be done to communicate the importance of relationships to middle-level sales management and to ensure, for example, that sales management goals and rewards are accordingly aligned with activities for establishing long-term customer relationships (cf. Fraenkel, 2011; Kuester et al., 2012). In addition to a company's frontline sales and marketing staff, top management could demonstrate the importance of relationships by visiting key customers personally and by prioritizing activities related to customer relationship in all operations.

Balancing a company's strategic orientations can also impact on measures used for monitoring business performance. While product-oriented companies may focus on product-based sales and profitability measures, market-oriented companies may favor measures related to market share, market trends and competitors. Instead, a relationship-oriented company could utilize share-of-wallet type of measures – in addition to the conventional measures, in order to differentiate between the potential, the sales volumes and the profitability of key customers, and to target sales and marketing activities appropriately.

#### *6.2.2 Managing new product launch as a relational activity*

This study demonstrates that NPL can be effectively managed as a relational activity. The relationship-oriented organizational culture acts as a necessary prerequisite for the relationship approach and its benefits will not be realized unless attention is paid to the details of sales force management and relationship marketing activities. If a company wants to invest in activities that aim to establish, maintain and leverage customer and stakeholder relationships in a real-life NPL context, systematic sales force management is essential for their effective implementation. This implies that the outcomes of the relationship approach cannot be realized as a pure management philosophy, but need to be directly linked to changes in sales and marketing activities.

This study guides how pharmaceutical companies should improve the management of the behavioral aspects of their frontline sales and marketing activities based on the physicians' expectations of their collaboration with the pharmaceutical industry at its best. In particular, sales force managers should ensure the appropriate and

professional behavior and proper course of action of sales representatives. Personnel of the pharmaceutical companies that work in the customer interface should interact openly and reciprocally, providing accurate and objective information instead of superficial and one-sided information. All these aspects can help to increase trust and satisfaction among physicians (Krumholz et al., 2007), especially when the worst experiences of the physician-pharmaceutical industry collaboration, which occurred in the 1980s and 1990s, still concern physicians.

The different degrees of the physicians' relationship orientation toward the pharmaceutical industry help companies to streamline their relationship-focused sales and marketing activities. In practice, the pharmaceutical companies should target these activities to the most responsive customer groups by taking into account the level of relationship orientation of the physicians. This would help the companies to avoid ineffective sales and marketing activities and help physicians to use their time and limited resources more effectively.

From a competence development perspective, this means that it is essential to put effort into relational competences, especially in case of personnel operating in frontline activities. The average training and competence level of the lower-level sales and marketing personnel needs to increase as sales and marketing activities that take a relationship approach require more insight, content, and emotional intelligence than the more mundane tasks of product sales and marketing. Purely product-based training alone is insufficient in present-day launches due to the wide range of stakeholders involved (cf. Talke and Hultink, 2010).

Furthermore, to enhance launch performance, sales and marketing activities aimed at creating relationships should be integrated (cf. Ingram, 2004; Hughes et al., 2012). Interestingly, commonly executed business operations currently include the outsourcing of the sales force and the centralizing of country-specific marketing units to regional level headquarters, while sales are performed country-by-country. Although these operations are justified by the need for cost-savings and flexibility, they are at odds with a relational approach that highlights the maintenance of strong relationships, which is a local activity in the buyer-seller interface.

### *6.2.3 Dealing with a diversity of success drivers*

The identified differences between the key success drivers at the different phases of the product lifecycle provide several concrete implications for the effective launch of a new pharmaceutical product. Most importantly, all personnel responsible for launching new products should note the distinction between the factors driving customer acceptance versus financial launch performance.

In the early phase of a product launch, the identification and involvement of KOLs is crucial because their rapid acceptance of a drug is critical for success (Corstjens et al., 2005). Preferably, close interaction should be initiated during the drug development phase (Sandberg, 2002), or even earlier in the drug design phase because the link between customer relationship management and new product development has been found to be a critical factor for increasing company performance (Ernst et al., 2010; Ernst et al., 2011). Utilizing the expertise of a KOL early enough, for example, in formulary decisions (cf. Groves et al., 2002), could help companies to avoid difficulties when competing in a market with low margins.

As seen from the perspective of physicians, the early adopters prescribe a new drug based on its product advantage over a competitor's product and their personal interest. Thus, the early involvement of a KOL could support a company in trying to achieve a customer's acceptance in this early market segment. This buyer's perspective in the adoption of a new product emphasizes the key role of the opinions of colleagues and opinion leaders, albeit this phenomenon has been criticized in the medical community (Moynihan, 2008). In addition, relationship marketing activities including early market pro-active activities, such as building market awareness to arouse interest, product-related high-quality education, and collaborative communication (Smith, 2009), are vital for success. However, regulatory approval aspects and national codes of practice need to be taken into account when planning and executing relationship marketing activities directed toward physicians and other healthcare professionals.

The prescribing behavior of later adopters is based on evidence- and experience-based reasoning. In this mainstream market segment, the roles of pricing and a product's cost-benefit ratio are emphasized. Thus, the strategic choices, such as comprehensively gathered market intelligence and a clearly defined launch strategy as well as tactical decisions concerning pricing policy and appropriate price level,



positively affect financial success. The opinions of physicians' colleagues have a strong impact on the introduction of a new drug, underlining the power of opinion as an accelerating or delaying factor in new product adoption (cf. Pitt and Nel, 1988; Palmatier et al., 2006; Jaakkola and Renko, 2007; Chiesa and Frattini, 2011). Hence, positive word-of-mouth should be supported with appropriate marketing mix activities, such as promotion and marketing communications and a proficiently executed marketing plan. These strategic choices and tactical decisions together with a deeper understanding of physicians' prescribing behavior should help the pharmaceutical companies to maximize the financial success of a NPL.

In the later phase of a product launch, management should also focus on the proper leveraging of a company's market-based assets, which will have been accumulated during a company's operation in the market. A company's market-oriented culture and especially its relationship-oriented organizational culture can help it to build and accumulate market-based assets by strengthening customer awareness and preference regarding the company's brand and by extending the existing customer base and supporting customer loyalty, thus paving the way for successful launches through established relationships (cf. Aarikka-Stenroos et al., 2014). Therefore, managers should identify their organization's existing but underutilized market-based assets and further understand how these accumulated assets could be employed and maximized in the planning and execution of a product launch.

In practice, the importance of market-based assets can be seen in the context of small pharmaceutical companies focusing on innovative product development. Due to a lack of market-based assets, these companies are not able to launch their new products on the actual market themselves and end up licensing the products to larger and more established pharmaceutical companies, which are in a better position to succeed in a NPL by leveraging their accumulated market-based assets.

Whereas the commercialization of radical innovations is an iterative process comprising transits back and forth between strategic marketing decision-making, market creation and preparation, and sales creation and development in some industry sectors (Aarikka-Stenroos and Lehtimäki, 2014), the nature of a NPL in the pharmaceutical industry (with its long development times and tight approval procedures) calls for a more straightforward approach to the launch process. From a relationship perspective it

means that company relationships need to be established when launching new products. As has been pointed out, undeveloped networks are one of the key external barriers for successful innovation diffusion (Sandberg and Aarikka-Stenroos, 2014), while properly developed networks may facilitate the adoption of a new product and further its success in the market (Aarikka-Stenroos et al., 2014; Chiesa and Frattini, 2011). Therefore, building a surrounding network, not only for customers, but also for other key stakeholders should be seen as a market-based asset.

#### *6.2.4 Implications for policymakers*

This study carries implications for policymakers regarding the understanding of the perspective of physicians and their needs for a mutually meaningful and beneficial relationship with the pharmaceutical industry. Novel knowledge might support policymakers in their attempts to balance better requirements for increased marketing restrictions with the primary needs of physicians in their cooperation with pharmaceutical companies (cf. Stossel, 2007). High-quality collaboration, at its best, supports a physician's professional development, enabling the needs of physicians to be better catered to, and, as a consequence, the needs of patients. It can also help to relieve the pressure on the limited resources of physicians, freeing up more of their time and budget for their key duties.

In addition, novel knowledge on early versus late adopters and their varying prescribing rationales might support policymakers in planning and building budgets, guidelines and incentive schemes. Incentive schemes for physicians may serve to optimize healthcare resourcing and clinical practices, especially when the financial challenges of public economics are increasing (Mossialos et al, 2005). Furthermore, from an educational perspective, policymakers should recognize the supporting role of the pharmaceutical industry in the continuous medical education and professional postgraduate studies of physicians. This aspect should also be taken into account when developing rules for physician-pharmaceutical industry collaboration.

One might ponder the ethical aspects of the relationship approach in the pharmaceutical NPL context. On the other hand, this thesis responds to this criticism by providing a deeper understanding of the physician-pharmaceutical industry relationship

and the physicians' need for mutually meaningful and beneficial collaboration with the pharmaceutical companies. Furthermore, from society's perspective, it is crucial that the launch of a new drug is well managed as it enables society to get the most out of R&D spending, and allows the pharmaceutical industry to invest more in the development of new drugs.

### **6.3 Avenues for future research**

The purpose of this thesis was to obtain a holistic and comprehensive overview of the key determinants of NPL success in the pharmaceutical industry. Special emphasis was put on the largely neglected relationship approach. In addition to the valuable theoretical contributions and the concrete managerial implications, this study has some limitations, which offer avenues for future research.

As the study was executed in one specific industry sector and in one country, future studies need to consider other industries that have different degrees of R&D intensity and/or a relational nature as well as various geographical areas in order to enable cross-country comparisons and the further generalization of results. The strength of the identified links between the key determinants and the launch performance suggests that the relational approach may impact on launch performance in other business and marketing contexts dominated by novel offerings and solutions carrying a risk for purchasers. In these contexts, the lowering of innovation diffusion barriers by working closely with key stakeholders will be of prime importance.

This study focused on the selected key mediators between a company's strategic orientations and launch performance. Future studies may explore other possible mechanisms through which a company's organizational culture is transformed into practice. As the product-oriented approach has dominated the pharmaceutical industry, an apparently vast knowledge about past experiences and processes has been accumulated in its companies. In agreement with the studies on market-based assets, these "technology-based assets" could be a potential mediator in addition to the widely studied concept of product advantage.

Furthermore, the examining of the potential contingencies and moderating effects of the identified key relationships, and the adoption of a longitudinal approach are encouraged. For example, it would be interesting to examine how digitalization and

online relationship marketing activities affect the physician-pharmaceutical industry relationship and the pharmaceutical companies' ways of operating at the customer interface. As online tools and applications are becoming increasingly available, future studies could focus on a combination of marketing and information technology cooperation, similarly to the commonly studied concepts of cross-functional coordination (e.g. Di Benedetto, 1999) and cooperation between marketing and R&D (e.g. Ernst et al., 2010).

This study focused on the physician-pharmaceutical industry relationship, illustrating the buyer-seller dyad. As pointed out, several different stakeholders are needed in order to get a new drug to market. Thus, future studies should broaden the focus to the other key relationships of different stakeholders in the pharmaceutical NPL context. Furthermore, future studies could examine the implementation of a company's relationship orientation in a deeper way by use of qualitative research settings.

From buyer's perspective, the aim of this study was to obtain a novel and deeper understanding of the physician-pharmaceutical industry relationship instead of making the results widely generalizable. Once the key factors and mechanisms for mutually meaningful physician-pharmaceutical industry collaboration and new drug introduction have been identified, future qualitative and larger-scale quantitative studies on this relationship and its role in the adoption patterns of physicians could extend the research focus across different countries and healthcare systems. For instance, further studies could investigate how a physicians' relationship orientation and the intensity of their interaction associates with the quality, quantity and the cost of their prescribing (Spurling et al., 2010) or the ending of drug therapy (Groves et al., 2002). Also future studies could focus on other healthcare professionals, their relationship orientation toward the pharmaceutical industry and its influences.

From a wider perspective, a physician's prescribing pattern does not illustrate the whole adoption of a new drug. Physicians typically choose a drug by prescribing it, but in the full adoption of a new drug the opinions and experiences of the end-users – the patients – should be taken into account (Jaakkola and Renko, 2007). Hence, further studies could include the perspective of patients as second-level adopters.

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# Appendices

## Appendix 1. Questionnaire

### SURVEY ON DETERMINANTS OF NEW PRODUCT LAUNCH SUCCESS

#### I) BACKGROUND INFORMATION

1. In which function/department you are working in the organization?
  - a. Business development
  - b. Management (e.g. Managing Director or Business Unit Director)
  - c. Market access/Pricing
  - d. Market research/intelligence
  - e. Marketing
  - f. Medical
  - g. Sales
  - h. Other, please specify
2. What is your position in the organization?
  - a. Director
  - b. Manager
  - c. Other
- 2a. Please specify your working title in the organization?
  - a. Business Unit Director
  - b. Commercial Director
  - c. Managing Director
  - d. Marketing Director
  - e. Medical Director
  - f. Sales Director
  - g. Sales and Marketing Director
  - h. Vice President
  - i. Other Director, please specify
- 2b. Please specify your working title in the organization?
  - a. Brand Manager
  - b. Business Development Manager
  - c. Business Unit Manager
  - d. Key Account Manager
  - e. Market Access Manager
  - f. Marketing Manager
  - g. Product Manager
  - h. Project Manager
  - i. Sales and Marketing Manager
  - j. Sales Manager
  - k. Other Manager, please specify
- 2c. Please specify your working title in the organization?
  - a. Medical / Scientific Advisor
  - b. Medical Scientific Liaison
  - c. Other, please specify



3. How long experience (in years) you have in the pharmaceutical industry?
  - a. 1 – 5 years
  - b. 5 – 10 years
  - c. 10 – 15 years
  - d. 15 – 20 years
  - e. > 20 years
4. How familiar you are with the new product launch related practices in your organization?
  - f. Very familiar
  - g. Quite familiar
  - h. Not at all familiar

***The following questions are related to the launched medicinal (drug) product characteristics. Please focus on a single recently (maximum 5 years ago) completed launch of a new medicinal (drug) product requiring marketing authorization in your organization that you are most familiar with.***

5. Was the launched product (*select only one option*)
  - a. Prescription (Rx) drug
  - b. Over-the-counter (OTC) drug
6. Was the launched product (*select only one option*)
  - a. Proprietary drug
  - b. Generic drug
  - c. Other
7. What was (were) the primary target customer group(s) for the launched product at the time of launch?
  - a. General practitioners/primary health care
  - b. Specialists/specialists health care
  - c. Both GPs and specialists
  - d. Consumers directly
  - e. Pharmacists
  - f. Veterinaries
8. What kind of innovation the launch product represented at the time of launch? (*select only one option*)
  - a. Major/radical innovation (e.g. totally new medical entity)
  - b. Minor/incremental innovation (e.g. any modification to the product available in market) – If yes, please select one or more of the following options:
    - i. New combination product
    - ii. Transfer from Rx to OTC
    - iii. Generic product
    - iv. Parallel import product
    - v. Line-extension of indication
    - vi. New dosage/strength
    - vii. New formulation
    - viii. New route of administration
    - ix. New flavor
    - x. New packaging
    - xi. Other

9. What was the stage of the launched product novelty at the time of launch? (*select only one option*)
  - a. Product was new to the market (i.e. There was not a corresponding product on the market)
  - b. Product was new to the company (i.e. There was a corresponding product on the market but the company did not have a corresponding product)
10. Where the product was launched?
  - a. Product was launched only in Finland
  - b. Product was launched as a part of global/European/Scandinavian wide launch
11. What was the year of the product launch?
12. Was the launched product first in the market? (E.g. was the proprietary drug first in its therapy class or was the generic drug first generic in its therapy class?)
  - a. Yes
  - b. No
13. What was the launched product's sales target (in million euros) within 12 months from the launch in Finland?
  - a. < 0.1 million euros
  - b. 0.1 – 0.5 million euros
  - c. 0.5 – 1 million euros
  - d. 1 – 2 million euros
  - e. > 2 million euros

## **II) DETERMINANTS OF NEW PRODUCT LAUNCH SUCCESS**

The following sets of statements will examine the determinants of the new product launch success. Please express your opinion on these determinants by assessing the following statements in scale from 1 to 7 in where **1 means you strongly disagree**, 2 means you partly disagree, 3 means you slightly disagree, 4 means you neither agree or disagree, 5 means you slightly agree, 6 means you partly agree and **7 means you strongly agree**. *Please answer from the perspective of the medicinal (drug) product that you have selected earlier.*

### **IIa) DOMINANT APPROACH**

#### ***Market orientation related statements***

*The statements of this section focus on company's overall market related mindset. Please response according to how well the following statements held true at the time of selected product launch. (1 = strongly disagree; 7 = strongly agree)*

- |    |  |   |   |   |   |   |   |   |
|----|--|---|---|---|---|---|---|---|
| 1. | We focused on gathering market intelligence pertaining to current and future customer needs.....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. | All of our functions – not just sales and marketing – were responsive to the gathered market intelligence pertaining to current and future customer needs..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. | Our company's objectives were driven primarily by customer satisfaction.....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. | We measured customer satisfaction systematically and frequently.....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- |     |   |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|---|
| 5.  | Our business strategies were driven by our beliefs about how we can create greater value for our customers.....               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6.  | Our strategy for competitive advantage was based on our understanding of our customers' needs .....                           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7.  | Our top management regularly discussed competitors' strengths and strategies .....  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8.  | We targeted customers and customer groups in which we had or were able to develop a competitive advantage.....                | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9.  | We had the ability to respond rapidly to competitors' actions .....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. | Information on customers, marketing successes and marketing failures were communicated across functions in the business ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. | All of our managers understood how everyone in our business can contribute to creating customer value .....                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

***Product characteristics related statements***

*The three first statements of this section focus on company's overall product related mindset. Please response according to how well the following statements held true at the time of selected product launch. (1 = strongly disagree; 7 = strongly agree)*

- |     |   |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|---|
| 12. | We believed that customer's perception of product superiority with respect to quality, cost-benefit ratio, or function relative to competitors is the key to new product launch success ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. | We believed that product innovativeness and uniqueness are the keys to new product launch success .....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. | We endeavored to offer the best products in our industry .....  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

*The last statements of this section focus on the selected launched drug product.*

- |     |   |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|---|
| 15. | The launched product offered unique benefits for customers .....  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. | The launched product was highly innovative.....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. | The launched product was radically different from competitor products .....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. | The launched product was superior (e.g. in terms of quality, cost-benefit ratio and/or functioning) to competing products ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. | The launched product fulfilled a clear unmet market need .....  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. | The launched product was compatible with customer's values and previous experiences .....                                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

### ***Strategic choices related statements***

*The statements of this section focus on the strategic aspects of the selected launched drug product. (1 = strongly disagree; 7 = strongly agree)*

- |     |   |       |   |   |   |   |   |   |   |
|-----|---|-------|---|---|---|---|---|---|---|
| 21. | Launch objectives and success measures had been clearly defined   | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. | Market information (e.g. market studies) regarding the product had been comprehensively gathered and utilized in decision-making.....   | 1     | 2 | 3 | 4 | 5 | 6 | 7 |   |
| 23. | Launch strategy (e.g. innovative and product advantage strategy; cost oriented strategy) had been clearly defined.....  | 1     | 2 | 3 | 4 | 5 | 6 | 7 |   |
| 24. | Market segmentation had been carefully conducted to identify an appropriate target market for the launched product .....  | 1     | 2 | 3 | 4 | 5 | 6 | 7 |   |
| 25. | Product had been carefully positioned for the target market taking into account to all relevant competitors .....   | 1     | 2 | 3 | 4 | 5 | 6 | 7 |   |
| 26. | Timing of the product launch was successful .....   | 1     | 2 | 3 | 4 | 5 | 6 | 7 |   |
| 27. | Market access strategy (e.g. informing key decision makers who are involved in assessment and approval of drugs about clinical, organizational and financial implications of introducing the new product) had been well-designed in a timely manner ..... | 1     | 2 | 3 | 4 | 5 | 6 | 7 |   |

### ***Tactical decisions related statements***

*The statements of this section focus on the tactical aspects of the selected launched drug product. (1 = strongly disagree; 7 = strongly agree)*

- |     |  |   |   |   |   |   |   |   |
|-----|--|---|---|---|---|---|---|---|
| 28. | Product launch was supported by a well-designed marketing mix (4Ps; product, price, promotion and place/distribution) .....  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. | Product branding was successful.....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30. | Pricing policy was well-grounded and the price level was considered appropriate (e.g. reimbursement was obtained as planned in the case of a prescription drug?) .....         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. | Promotion and marketing communication was well conducted .....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32. | The whole supply chain (e.g. sales estimates – manufacturing plant – warehouse – wholesaler – customer) of the launched product worked smoothly and promptly .....             | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33. | Marketing budget and marketing resources were sufficient and their allocation to various means and activities was well conducted .....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34. | Marketing plan was executed proficiently .....   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 35. | Market access activities (e.g. advanced notification documentation, health outcome toolkits and implementation tactics) were successfully implemented in a timely manner ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

### ***Sales force management related statements***

*The statements of this section focus on sales force management of the selected launched drug product. (1 = strongly disagree; 7 = strongly agree)*

- |     |   |       |   |   |   |   |   |   |   |
|-----|---|-------|---|---|---|---|---|---|---|
| 36. | Adequate sales resources had been allocated for the launched product  | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 37. | Sales people had been given a thorough training and were knowledgeable about the launched product   | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 38. | Sales people were motivated and enthusiastic about the launched product   | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 39. | Sales people were held accountable for the targets of the launched product and their compensation and/or incentives were aligned with the targets | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 40. | Sales people's activity (e.g. processes, practices and techniques) were well controlled and managed during the launch period                      | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 41. | Sales worked closely with marketing to make the launch successful   | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

### **IIb) RELATIONSHIP APPROACH**

#### ***Relationship orientation related statements***

*The statements of this section focus on company's overall customer relationship mindset. Please response according to how well the following statements held true at the time of selected product launch. (1 = strongly disagree; 7 = strongly agree)*

- |     |   |       |   |   |   |   |   |   |   |
|-----|---|-------|---|---|---|---|---|---|---|
| 42. | In our organization, retaining customers was considered to be a top priority  | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 43. | Our employees were encouraged to focus on customer relationships  | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 44. | In our organization, customer relationships were considered to be a valuable asset  | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 45. | Our senior management emphasized the importance of customer relationships   | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 46. | We believed that establishing and maintaining strong and long-term customer relationships is a key to success                           | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 47. | Our company was willing to invest time, effort, spending and resources on building stronger customer relationships                      | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 48. | Our company was committed to maintain valued relationships with our customers and was willing to work at maintaining those              | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 49. | Our company treated our customers with empathy (e.g. we saw things from each others point of view and cared about each others feelings) | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 50. | Our company treated customer with reciprocity (e.g. we kept our promises in any situation and repaid customers' kindness)               | ..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

51. Our company and our customers trusted each others (e.g. we had confidence in each others reliability and integrity) ..... 1 2 3 4 5 6 7

***Relationship marketing activities related statements***

*The statements of this section focus on relationship marketing activities conducted for the selected launched drug product.*

*(1 = strongly disagree; 7 = strongly agree)*

52. Our company had close customer interaction during the product development process of the launched product (e.g. clinical trials) ..... 1 2 3 4 5 6 7
53. Key opinion leaders (KOL) were identified and involved in the product launch ..... 1 2 3 4 5 6 7
54. Our company initiated early market pro-activeness activities (e.g. arousal of interest, market awareness, involvement of opinion leaders, product education) ..... 1 2 3 4 5 6 7
55. Communication with customers was collaborative including frequent sharing of tailored information ..... 1 2 3 4 5 6 7
56. We provided high-quality training (e.g. continuing medical education) for our customers ..... 1 2 3 4 5 6 7
57. Sales people and other personnel working in customer interface recognized their roles as relationship builders ..... 1 2 3 4 5 6 7
58. Our company had implemented effective key account management (KAM) practices ..... 1 2 3 4 5 6 7
59. Relationship related market access activities (e.g. advisory board meeting, activities toward decision-makers and payers) were successfully implemented in a timely manner ..... 1 2 3 4 5 6 7
60. Customer related conflicts were managed effectively and resolved quickly ..... 1 2 3 4 5 6 7

***Customer acceptance related statements***

*The statements of this section focus on customer acceptance of the launched drug product.*

*(1 = strongly disagree; 7 = strongly agree)*

61. Customers were well aware of the brand of the launched product ..... 1 2 3 4 5 6 7
62. Customers preferred the brand of the launched product to competitors' product brands ..... 1 2 3 4 5 6 7
63. The launched product was rapidly accepted by key opinion leaders (KOL) ..... 1 2 3 4 5 6 7
64. The launched product was accepted by majority of the target customers ..... 1 2 3 4 5 6 7
65. Customers were satisfied with the launched product ..... 1 2 3 4 5 6 7

66. Customers were positively referring (word-of-mouth) the launched product to other potential customers ..... 1 2 3 4 5 6 7
67. Our company succeeded to expand product's demand through relational networking among our customers ..... 1 2 3 4 5 6 7

### ***Market-based assets related statements***

*Before the new product launch success measures, these last statements focus on market-based assets accumulated for the company. (1 = strongly disagree; 7 = strongly agree)*

68. Customers were well aware of our company brand ..... 1 2 3 4 5 6 7
69. Customers preferred our company brand to competitors' company brands ..... 1 2 3 4 5 6 7
70. Our company had an extensive existing customer base.. 1 2 3 4 5 6 7
71. Our company had strong prior relationships with our customers ..... 1 2 3 4 5 6 7
72. Our customers were loyal to our company ..... 1 2 3 4 5 6 7

### **III) NEW PRODUCT LAUNCH SUCCESS**

The following set of questions will clarify success of the selected new medical (drug) product launch. Please answer to the questions by assessing them in scale from -5 to +5 in where -5 means far below the target level and +5 means far above the target level. Please provide your opinion both after the first year and after three years from the launch. If you don't know, please leave the individual item empty.

1. How successful was the product launch in meeting its **sales target**?

	After the first year from the launch											
<b>Far below sales target</b>	-5	-4	-3	-2	-1	0	1	2	3	4	5	<b>Far above sales target</b>
	After three years from the launch											
<b>Far below sales target</b>	-5	-4	-3	-2	-1	0	1	2	3	4	5	<b>Far above sales target</b>

2. How successful was the product launch in meeting its **market share target**?

	After the first year from the launch											
<b>Far below market share target</b>	-5	-4	-3	-2	-1	0	1	2	3	4	5	<b>Far above market share target</b>
	After three years from the launch											
<b>Far below market share target</b>	-5	-4	-3	-2	-1	0	1	2	3	4	5	<b>Far above market share target</b>

3. How successful was the product launch in meeting its **profitability target**?

	After the first year from the launch											
<b>Far below profitability target</b>	-5	-4	-3	-2	-1	0	1	2	3	4	5	<b>Far above profitability target</b>
	After three years from the launch											
<b>Far below profitability target</b>	-5	-4	-3	-2	-1	0	1	2	3	4	5	<b>Far above profitability target</b>

4. How would you rate the **overall success** of your company's selected product launch perceived as a whole?

<b>Launch was very unsuccessful</b>	-5	-4	-3	-2	-1	0	1	2	3	4	5	<b>Launch was very successful</b>
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#### **IV) QUESTIONS RELATED TO YOUR COMPANY**

At the end, please answer to the questions related to your company.

1. Where does the company's headquarter locate?
  - a. In Finland
  - b. Outside Finland
2. What is the size of the company in terms of revenue (in million euros) in Finland in 2011?
  - a. < 50 million euros
  - b. 50 – 100 million euros
  - c. > 100 million euros
3. What is the size of the company in terms of revenue (in billion euros) outside Finland in 2011?
  - a. < 1 billion euros
  - b. 1 – 5 billion euros
  - c. 5 – 10 billion euros
  - d. > 10 billion euros



## Appendix 2. Characteristics of the respondents in the survey study

Demographics	Number*	%
<i>Location of companies' headquarters</i>		
Finland	36	33.3
Outside Finland	72	66.7
<i>Company size (revenue in Finland)</i>		
< 50 million euros	40	38.1
50 - 100 million euros	25	23.8
> 100 million euros	40	38.1
<i>Company size (revenue outside Finland)</i>		
< 1 billion euros	25	25.3
1 - 5 billion euros	23	23.2
5 - 10 billion euros	7	7.1
> 10 billion euros	44	44.4
<i>Respondents' department in their company</i>		
Business Development	2	1.8
Management	25	22.9
Market Access / Pricing	7	6.4
Marketing	53	48.6
Medical	5	4.6
Sales	14	12.8
Other	3	2.8
<i>Respondents' position in their company</i>		
Director	29	26.6
Manager	75	68.8
Other	5	4.6
<i>Respondents' experience in the pharmaceutical industry (years)</i>		
1 - 5	5	4.6
5 - 10	20	18.3
10 - 15	34	31.2
15 - 20	20	18.3
> 20	30	27.5
<i>Respondents' familiarity with new product launch related practices</i>		
Very familiar	78	72.9
Quite familiar	29	27.1
Not at all familiar	0	0.0

\*Total number of respondents in the sample is 109. Occasional empty answers in the background information section of the survey have been ignored.

### Appendix 3. Characteristics of the participants in the interview study

Demographics	n	%
<i>Gender</i>		
Male	9	41
Female	13	59
All	22	100
<i>Age (years)</i>		
31-40	5	23
41-50	9	41
51-60	5	23
61-70	3	14
All	22	100
<i>Work experience (years)</i>		
1-10	5	23
11-20	6	27
21-30	6	27
Over 30	5	23
All	22	100
<i>Speciality</i>		
General practitioner	9	41
Specialist*	13	59
All	22	100
<i>Working sector</i>		
Primary health care	3	14
Special health care	10	45
Private	6	27
Primary health care and private	1	5
Special health care and private	2	9
All	22	100
<i>Participated in clinical trials</i>		
Yes	8	36
No	14	64
All	22	100
<i>Frequency in meeting pharmaceutical industry representatives (times/month)</i>		
0-1	6	27
2-5	13	59
6-10	2	9
More than 10	1	5
All	22	100
<i>Key opinion leader</i>		
Yes	11	50
No	11	50
All	22	100

\* Specialities among interviewed physicians included anaesthesiology and intensive care ( $n=3$ ), general practice ( $n=3$ ), obstetrics and gynaecology ( $n=3$ ), infectious diseases ( $n=2$ ), otolaryngology, psychiatry, geriatrics, neurology, and occupational health.

#### Appendix 4. Variables in the PLS-R/TP analysis

Code	Variables	Type
<i>Background information</i>		
Q1	In which function/department of the organization do you work?	x
Q2	What is your position in the organization?	x
Q3	How long have you been working in the pharmaceutical industry?	x
Q4	How familiar are you with the new product launch related practices in your organization?	x
Q5	Was the product launched a prescription or over-the-counter (OTC) drug?	x
Q6	Was the product launched a proprietary or generic drug?	x
Q7*	What was (were) the primary target customer group(s) for the launched product at the time of launch?	x
Q8	What kind of innovation did the product represent at the time of launch?	x
Q9	What was the stage of the launched product novelty at the time of launch?	x
Q10	Where was the product launched?	x
Q11	What year was the product launched?	x
Q12	Was the launched product the first of its kind on the market?	x
Q13	What was the product's sales target in the first 12 months after the launch in Finland?	x
C1	Where does the company's headquarter locate?	x
C2	What is the size of the company in terms of revenue in Finland in 2011?	x
C3	What is the size of the company in terms of revenue outside Finland in 2011?	x
<i>Market Orientation</i>		
MO1	We focused on gathering market intelligence pertaining to current and future customer needs	x
MO2	All of our functions, not just sales and marketing, were responsive to market intelligence gathered on current and future customer needs	x
MO3	Our company's objectives were driven primarily by customer satisfaction	x
MO4	We measured customer satisfaction systematically and frequently	x
MO5	Our business strategies were driven by our beliefs about how we can create greater value for our customers	x
MO6	Our strategy for competitive advantage was based on our understanding of our customers' needs	x
MO7	Our top management regularly discussed competitors' strengths and strategies	x
MO8	We targeted customers and customer groups in which we had or were able to develop a competitive advantage	x
MO9	We had the ability to respond rapidly to competitors' actions	x

MO10	Information on customers, marketing successes and failures were communicated across functions in the business	x
MO11	All of our managers understood how everyone in our business can contribute to creating customer value	x
<i>Product Orientation</i>		
PO1	We believed the customer's perception of product superiority with respect to quality, cost-benefit ratio, or function relative to competitors is the key to new product launch success	x
PO2	We believed that product innovativeness and uniqueness are the keys to new product launch success	x
PO3	We endeavoured to offer the best products in our industry	x
<i>Relationship Orientation</i>		
RO1	In our organization, retaining customers was considered a top priority	x
RO2	Our employees were encouraged to focus on customer relationships	x
RO3	In our organization, customer relationships were considered to be a valuable asset	x
RO4	Our senior management emphasized the importance of customer relationships	x
RO5	We believed that establishing and maintaining strong and long-term customer relationships is a key to success	x
RO6	Our company was willing to invest time, effort, spending and resources on building stronger customer relationships	x
RO7	Our company was committed to maintaining valued relationships with our customers and was willing to work on maintaining them	x
RO8	Our company treated our customers with empathy (e.g. we saw things from each other's point of view and cared about each other's feelings)	x
RO9	Our company treated customers with reciprocity (e.g. we kept our promises in every situation and repaid customers' kindness)	x
RO10	Our company and our customers trusted each others (e.g. we had confidence in each other's reliability and integrity)	x
<i>Product Advantage</i>		
PA1	The launched product offered customers unique benefits	x
PA2	The launched product was highly innovative	x
PA3	The launched product was radically different from competitor products	x
PA4	The launched product was superior (e.g. in terms of quality, cost-benefit ratio and/or function) to competing products	x
PA5	The launched product satisfied a clear, unmet market need	x
PA6	The launched product was compatible with the customer's values and previous experiences	x
<i>Strategic Choices</i>		
STR1	Launch objectives and success measures had been clearly defined	x
STR2	Market intelligence (e.g. market studies) on the product had been comprehensively gathered and utilized in decision-making	x
STR3	Launch strategy (e.g. innovative and product advantage strategy; cost oriented strategy) had been clearly defined	x
STR4	Market segmentation had been carefully applied to identify an appropriate target market for the launched product	x
STR5	The product had been carefully positioned in the target market taking all relevant competitors into account	x
STR6	The timing of the product launch was successful	x

STR7	Market access strategy (e.g. informing key decision makers involved in assessment and approval of drugs about clinical, organizational and financial implications of introducing the new product) had been well-designed in a timely manner	x
<i>Tactical Decisions</i>		
TAC1	Product launch was supported by a well-designed marketing mix (4Ps; product, price, promotion and place/distribution)	x
TAC2	Product branding was successful	x
TAC3	Pricing policy was well-grounded and the price level was considered appropriate (e.g. reimbursement was obtained as planned in the case of a prescription drug)	x
TAC4	Promotion and marketing communication was conducted well	x
TAC5	The whole supply chain (e.g. manufacturing plant – warehouse – wholesaler – customer) for the launched product ran smoothly and promptly	x
TAC6	Marketing budget and marketing resources were sufficient and their allocation to various means and activities was conducted well	x
TAC7	Marketing plan was executed proficiently	x
TAC8	Market access activities (e.g. advance notification documentation, health outcome toolkits, implementation tactics) were successfully implemented in a timely manner	x
<i>Sales Force Management</i>		
SFM1	Adequate sales resources had been allocated to the product launched	x
SFM2	Sales people had received thorough training and were knowledgeable about the product	x
SFM3	Sales people were motivated and enthusiastic about the product	x
SFM4	Sales people were held accountable for the launched product targets, and their compensation and/or incentives were aligned with the targets	x
SFM5	Sales people activities (e.g. processes, practices and techniques) were well managed during the launch period	x
SFM6	Sales worked closely with marketing to make the launch a success	x
<i>Relationship Marketing Activities</i>		
RM1	Our company had close customer interaction during the launched product development process (e.g. clinical trials)	x
RM2	Key opinion leaders were identified and involved in the product launch	x
RM3	Our company initiated early market pro-activeness activities (e.g. arousing of interest, market awareness, involvement of opinion leaders, product education)	x
RM4	Communication with customers was collaborative including frequent sharing of tailored information	x
RM5	We provided high-quality training (e.g. continuing medical education) for our customers	x
RM6	Sales people and other personnel working at the customer interface recognized their role as relationship builders	x
RM7	Our company had implemented effective key account management (KAM) practices	x
RM8	Relationship related market access activities (e.g. advisory board meeting, activities directed at decision-makers and payers) were successfully implemented in a timely manner	x
RM9	Customer related conflicts were managed effectively and resolved quickly	x
<i>Market-Based Assets</i>		

MBA1	Customers were well aware of our company brand	x
MBA2	Customers preferred our company brand to that of competitor companies	x
MBA3	Our company had an extensive existing customer base	x
MBA4	Our company had strong prior relationships with its customers	x
MBA5	Our customers were loyal to our company	x
<i>Customer Acceptance</i>		
CA1	Customers were well aware of the brand of the launched product	x
CA2	Customers preferred the launched product brand to competitors' product brands	x
CA3	The launched product was rapidly accepted by key opinion leaders (KOL)	x/y
CA4	The launched product was accepted by the majority of the target customers	x/y
CA5	Customers were satisfied with the launched product	x
CA6	Customers were positively referring (word-of-mouth) the launched product to other potential customers	x
CA7	Our company succeeded in increasing demand for the product through relational networking amongst our customers	x
<i>New Product Launch Success</i>		
NPLS1	How successful was the product launch in meeting its sales target?	y
NPLS2	How successful was the product launch in meeting its market share target?	y
NPLS3	How successful was the product launch in meeting its profitability target?	y
NPLS4	How would you rate the overall success of your company's selected product launch perceived as a whole?	y

x = Predictor variable; y = Response variable; \* a = General practitioners (GP)/Primary health care, b = Specialists/Specialist health care,

c = Both GPs and specialists, d = Consumers directly, e = Pharmacists, f = Veterinarians

## Appendix 5 Selectivity ratios and confidence intervals for predictor variables

	Financial Success		Customer Acceptance of KOL		Customer Acceptance of Majority of Customers	
	SR	CI ( $p=0.05$ )	SR	CI ( $p=0.05$ )	SR	CI ( $p=0.05$ )
Q1	0.006	0.011	0.003	0.006	0.000	0.004
Q2	0.000	0.002	0.002	0.004	0.000	0.002
Q3	0.000	0.003	-0.005	0.005	0.002	0.003
Q4	-0.091	0.020	0.002	0.003	-0.003	0.007
Q5	0.028	0.009	-0.080	0.029	-0.000	0.004
Q6	0.062	0.015	0.000	0.004	0.035	0.012
Q7a	0.043	0.007	0.002	0.003	0.007	0.005
Q7b	-0.020	0.009	0.024	0.017	0.002	0.006
Q7c	0.000	0.002	-0.001	0.004	-0.012	0.008
Q7d	0.013	0.005	-0.084	0.026	-0.001	0.004
Q7e	0.076	0.018	-0.037	0.023	0.012	0.008
Q7f	0.035	0.007	0.016	0.006	0.029	0.009
Q8	0.072	0.018	-0.015	0.013	0.036	0.016
Q9	0.024	0.008	-0.040	0.016	-0.002	0.006
Q10	-0.252	0.042	0.019	0.014	-0.025	0.014
Q11	0.004	0.006	0.010	0.013	-0.005	0.007
Q12	0.022	0.008	-0.073	0.021	-0.014	0.011
Q13	0.033	0.020	0.031	0.022	0.009	0.012
C1	-0.091	0.043	-0.009	0.016	-0.087	0.028
C2	0.056	0.018	0.008	0.014	0.048	0.027
C3	-0.078	0.025	-0.000	0.006	-0.003	0.006
MO1	0.165	0.030	0.065	0.037	0.021	0.026
MO2	0.092	0.024	0.016	0.016	0.068	0.036
MO3	0.419	0.058	0.052	0.045	0.145	0.061
MO4	0.291	0.064	0.067	0.047	0.034	0.030
MO5	0.144	0.027	0.050	0.018	0.077	0.023
MO6	0.171	0.032	0.134	0.038	0.219	0.043
MO7	0.090	0.026	0.020	0.019	0.031	0.022
MO8	0.253	0.047	0.065	0.042	0.170	0.056
MO9	0.280	0.050	0.028	0.026	0.194	0.074
MO10	0.096	0.029	0.0672	0.032	0.132	0.049
MO11	0.168	0.036	0.0555	0.025	0.129	0.050
PO1	0.083	0.033	0.120	0.031	0.011	0.015
PO2	0.000	0.009	0.132	0.038	0.000	0.007
PO3	0.091	0.034	0.056	0.021	0.016	0.015
RO1	0.068	0.032	0.101	0.051	0.188	0.074
RO2	0.037	0.024	0.064	0.044	0.147	0.070
RO3	0.045	0.028	0.071	0.045	0.178	0.075
RO4	0.016	0.016	0.037	0.030	0.071	0.046
RO5	0.083	0.036	0.108	0.052	0.224	0.067
RO6	0.170	0.053	0.217	0.077	0.480	0.145
RO7	0.081	0.034	0.159	0.063	0.290	0.107
RO8	0.286	0.074	0.359	0.111	0.708	0.153
RO9	0.251	0.060	0.241	0.074	0.520	0.096
RO10	0.334	0.085	0.317	0.091	0.367	0.074
PA1	0.006	0.013	0.601	0.151	0.091	0.051
PA2	-0.056	0.024	0.233	0.082	0.003	0.015

PA3	-0.028	0.017	0.258	0.089	0.003	0.015
PA4	0.002	0.007	0.455	0.094	0.083	0.039
PA5	0.049	0.028	0.588	0.140	0.241	0.090
PA6	0.052	0.018	0.195	0.040	0.157	0.041
STR1	0.280	0.051	0.037	0.030	0.181	0.075
STR2	0.427	0.098	0.168	0.076	0.124	0.064
STR3	0.478	0.073	0.204	0.066	0.388	0.107
STR4	0.130	0.048	0.306	0.092	0.453	0.094
STR5	0.163	0.051	0.253	0.073	0.239	0.057
STR6	0.347	0.076	0.503	0.104	0.599	0.110
STR7	0.157	0.040	0.241	0.085	0.297	0.095
TAC1	0.275	0.042	0.007	0.016	0.117	0.056
TAC2	0.295	0.063	0.222	0.065	0.283	0.074
TAC3	0.490	0.106	0.041	0.038	0.077	0.036
TAC4	0.545	0.100	0.151	0.067	0.313	0.119
TAC5	0.060	0.019	0.048	0.020	0.043	0.019
TAC6	0.231	0.062	0.237	0.066	0.285	0.078
TAC7	0.526	0.104	0.156	0.066	0.234	0.094
TAC8	0.259	0.045	0.042	0.030	0.119	0.059
SFM1	0.027	0.016	0.169	0.044	0.085	0.028
SFM2	0.032	0.022	0.252	0.081	0.143	0.054
SFM3	0.070	0.032	0.370	0.107	0.329	0.088
SFM4	0.031	0.018	0.145	0.048	0.160	0.043
SFM5	0.122	0.041	0.115	0.043	0.112	0.046
SFM6	0.060	0.030	0.084	0.041	0.164	0.044
RM1	0.004	0.010	0.383	0.113	0.091	0.038
RM2	0.004	0.007	0.526	0.142	0.123	0.047
RM3	0.005	0.008	0.488	0.135	0.088	0.040
RM4	0.094	0.031	0.649	0.120	0.447	0.100
RM5	0.014	0.012	0.217	0.078	0.077	0.040
RM6	0.107	0.033	0.358	0.080	0.386	0.080
RM7	0.041	0.019	0.173	0.049	0.235	0.050
RM8	0.082	0.022	0.185	0.062	0.148	0.053
RM9	0.191	0.031	0.196	0.042	0.223	0.042
MBA1	0.095	0.042	0.079	0.043	0.537	0.139
MBA2	0.123	0.050	0.203	0.076	0.664	0.163
MBA3	0.124	0.053	0.133	0.062	0.585	0.145
MBA4	0.173	0.066	0.334	0.112	1.000	0.220
MBA5	0.203	0.070	0.425	0.133	0.930	0.210
CA1	0.061	0.028				
CA2	0.124	0.046				
CA3	0.266	0.056				
CA4	0.368	0.065				
CA5	0.373	0.074				
CA6	0.423	0.077				
CA7	0.627	0.096				

KOL = Key opinion leader; SR = Selectivity ratio; CI = Confidence interval



## Appendix 6 Description of the categories and the representative citations

Category	Description	Quotation
<i>Relationship orientation</i>		
Positive (n=8; 36%)	Physicians' attitude was affirmative, trustful and cooperative. They were interested in collaborating with pharmaceutical companies and had positive experiences of it. They enjoyed meeting sales representatives and appreciated the education and information provided by the pharmaceutical companies.	[My attitude is] very positive. [...] I want to hear about new medicines. (Participant 7) We need medicines and information about new medicines. In that way, I would say [my relationship is] positive and willing to collaborate." (Participant 4) I would say I have a good relationship overall. At its best, it supports professional education. (Participant 3)
Neutral (n=9; 41%)	Physicians valued research and new drug development but saw pharmaceutical industry as a commercial operator and as a tool provider. Their attitude with industry was not eminently positive or negative.	We need the pharmaceutical industry. They do a lot of useful research and develop essential medicines. (Participant 17) In theory, I trust the pharmaceutical industry and I appreciate it. It is a commercial business; its development concentrates a lot on those medicines which are most sold. (Participant 1)
Negative (n=5; 23%)	Physicians' attitude was reserved, critical and distant. They regarded collaboration and drug marketing as unethical, and distrusted research and information provided by the companies.	If there was no pharmaceutical industry, we would have no new medicines. (Participant 13) I feel that the pharmaceutical industry is very [...] clearly a capitalist organisation. They are making money, and that is their business and their priority number one. (Participant 2) I think [their] marketing is always unethical. [It is] a fact that the industry tries to manipulate my thoughts about medicines by hosting events where it spends money. (Participant 6) I do not like that the pharmaceutical industry, for example, plays such a great role in our education at every level. [...] I always have a bad conscience if the pharmaceutical industry is sponsoring something. (Participant 16)
<i>Interaction</i>		
Highly active (n=5; 23%)	Physicians had a great deal of varying interaction with the pharmaceutical companies. They participated spontaneously in organizing educational events and lectures, or they acted as lecturers in collaboration with pharmaceutical companies.	We have a lot of collaboration with the pharmaceutical industry, especially the organising of educational events. (Participant 12) I have been in touch with the pharmaceutical industry quite a lot because I am an educator-physician. I provide education and at the moment it is almost completely sponsored by the pharmaceutical industry. (Participant 19)
Active (n=5; 23%)	Physicians participated in the detailing of products promoted by sales representatives, and at educational and other events organized by the pharmaceutical	It is good to have the possibility to contact and request personal education about a product. (Participant 2)

	companies. They contacted pharmaceutical companies only when needed and did not actively participate actively in the organizing of education or any other collaboration.	If there is a new medicinal product, which I don't have experience of, and there is a problematic case with a patient, I don't hesitate to contact the medical company or their representative. (Participant 10)
Passive (n=9; 41%)	Physicians participated in the detailing of products and educational events organized by the pharmaceutical companies but they regarded their role as being the recipient of information.	[Interaction is] intensive and even friendly with certain sales representatives.... Educational events organized by [the pharmaceutical industry] are so good and because they are usually free I participate in them and would like to go to them all the time. (Participant 7)
Highly passive (n=3; 14%)	Physicians avoided interaction with pharmaceutical companies as much as possible. They typically blocked or failed to answer contact from pharmaceutical companies, and avoided personal contact with its representatives.	[I have participated in] product detailing... In practice, I'm mainly a target for marketing at the moment a product is launched. I do not have any direct collaboration with the pharmaceutical industry as such. I have not taken part in any clinical trials or the development of medicinal products. (Participant 8)  I have had little interaction [with the pharmaceutical industry]. It is limited to these weekly product detailing [sessions] that we have here in the hospital. [The sales representatives] detail products in our field. (Participant 11)
<i>New product introduction</i>		
Immediate adopters (n=3; 14%)	Physicians introduced a new drug as early as possible, even before marketing authorization. They were very keen on research data related to new drugs and called for new products in advance.	I tend to get my information from scientific research, and communication with scientists and educators related to that research, and it comes in this [innovator] phase and the wider use of the drug comes later. (Participant 3)
Early adopters (n=9; 41%)	Physicians were willing to prescribe new drugs, were interested in them and ready to take advantage of new research for the benefit of their patients at an early phase.	We are the ones who try them first. I have always been unprejudiced. (Participant 19)  A willingness to be up-to-date and to utilise new research for the benefit of patients. (Participant 12)
Late adopters (n=10; 45%)	Physicians delayed the introduction of new drugs and did not prescribe new drugs until they had sufficient information about them and their clinical profile. The characteristics of conservatism, scepticism, cautiousness and criticality described their approach.	Our duty in the university hospital is to try such new things and gain experience, and to disseminate that information. (Participant 14)  Basically, I have a rather conservative line regarding new drugs. My colleagues' expert opinions are the ones that matter in the long run... The pricing and reimbursement policy are factors which impact as well. They have to be taken into account too. (Participant 9)  I don't prescribe them [new drugs], unless I hear from a colleague that it has worked well. [...] In certain cases, it has been entered into the [organisation's internal] treatment practice

		that certain drugs are prescribed. [...] Some chief physician has decided that this is the way to go. (Participant 20)
Bipolar adopters (n=10; 45%)	Physicians prescribed new drugs both in the early and later phases based on the different rationales for different situations when introducing new drugs.	<p>In all gynaecology related matters I am at the forefront. I have been the first to prescribe the drugs that are launched specifically for my field. But when it comes to everything else not related to gynaecology, "I follow". I am like, "Let's see when everyone else has tried it". (Participant 19)</p> <p>In cases of a new innovation, I have introduced it rather fast. But if it [a new drug] has no clear advantage compared to some other product available or to a product which I personally have a lot of experience of, I don't feel any need to prescribe it. (Participant 20)</p>